REPORTS FROM THE SCIENTIFIC EXPEDITION TO THE NORTH-WESTERN
PROVINCES OF CHINA UNDER THE LEADERSHIP OF DR. SVEN HEDIN
— THE SINO-SWEDISH EXPEDITION —
PUBLICATION 23

HISTORY
OF THE EXPEDITION IN ASIA
1927—1935

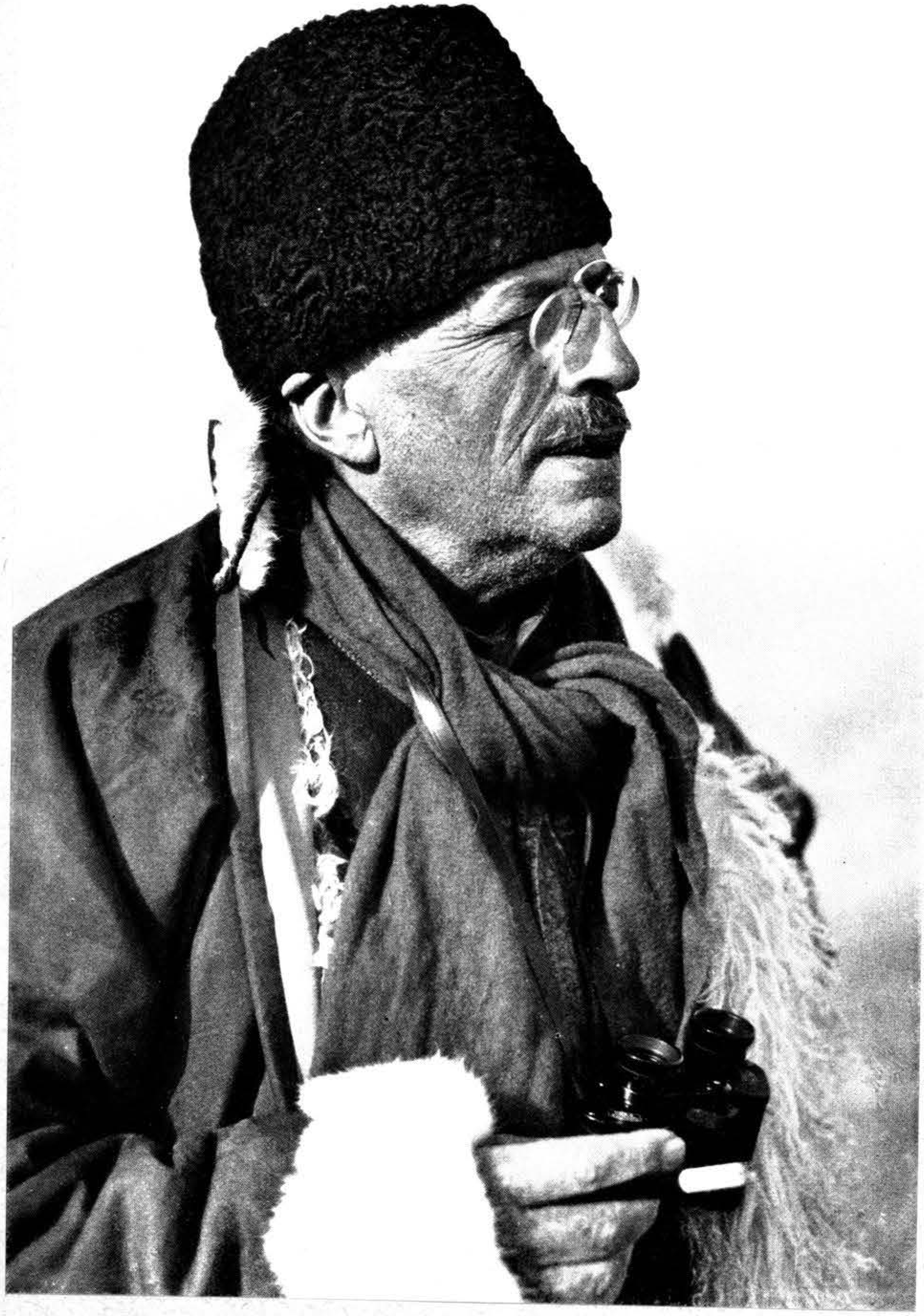
BY

SVEN HEDIN

IN COLLABORATION WITH
FOLKE BERGMAN

PART I
1927—1928

STOCKHOLM 1943



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Sven Hedin

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TO HIS ROYAL HIGHNESS
THE CROWN PRINCE OF SWEDEN

GUSTAF ADOLF

THIS WORK IS DEDICATED AS A TOKEN
OF GRATITUDE FOR THE GREAT AND
ENCOURAGING INTEREST SHOWN IN
THE RESEARCHES OF THE SWEDISH
EXPEDITIONS IN ASIA

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PREFACE

Between the years 1885 and 1909 I made three shorter trips and as many longer journeys of exploration in Asia, spending, in the course of these twenty-four years, no fewer than twelve and a half years on Asiatic soil. In the intermediate years between the expeditions I wrote descriptions of my journeys and reports of scientific results. On my return from the first journey, in the autumn of 1886, I was enrolled at the University of Stockholm, where for a couple of years I studied geology under Professor W. C. Brögger, physics under Professor Knut Ångström and zoology under Professor Wilhelm Leche. For one term I was a pupil of Professor A. G. Högbom in Uppsala, where I graduated with geology as my main subject and physical geography and zoology as secondary subjects. In the autumn of 1889 I was enrolled as a student at the University of Berlin, to study physical geography under the famous China-explorer and Asiatic expert Baron Ferdinand von Richthofen, historical geography under Professor Heinrich Kiepert and palaeontology under Professor Dames. On my return home from my second journey, which took me through northern Persia and Russian Turkistan to Kashgar in Chinese Turkistan, I resumed my studies with von Richthofen, to prepare myself under his enlightened and inspiring guidance for a first big expedition to Central Asia and Tibet.

In consequence of these early journeys, following on each other's heels at such close intervals, my academic schooling was all too short and inadequate. My exploration of innermost Asia was thus rather the work of a pioneer than that of a well-schooled scientist. During the three bigger expeditions I made it my chief task to chart the remaining unknown parts of Inner Asia and especially Tibet as accurately as time permitted. On the expeditions of 1893—97, 1899—1902 and 1904—09 I was always the sole European, and I was thus obliged to make all the scientific observations and collections myself. On the expedition of 1899—02, however, when I took with me an escort of four Siberian Cossacks, and during a part of my Transhimalayan journey, when an Eurasian from India was a member of my staff, I had great help from these men. My work then comprised mapping; the collection of petrographic samples and plants; the making of astronomical observations; the keeping of a meteorological journal; in inhabited regions the questioning of the population concerning the geography of the country, its products, commerce, roads and other details; the measuring of altitudes with aneroid and hypsometer; and finally, the photographing and drawing of panoramas, landscapes, temples, racial types and so on.

The scientific results that I had collected on the three above-mentioned expeditions, as well as the observations I had made, were published in the following four works:

1. *Die geographisch-wissenschaftlichen Ergebnisse meiner Reisen in Zentralasien*, Petermanns Mitteilungen, Ergänzungsband XXVIII; mit 6 Karten in 1: 1,000,000 von Dr Bruno Hassenstein, Gotha 1900.
2. *Scientific Results of a Journey in Central Asia and Tibet;* 6 volumes and 2 volumes of maps, Stockholm 1904—08.
3. *Southern Tibet;* 9 volumes text and 2 volumes Maps and Panoramas, Stockholm 1917—22.
4. *Eine Routenaufnahme durch Ost-Persien;* 2 Bde Text und 1 Bd Atlas, Stockholm 1918—27.

In the course of these lonely journeys the wish grew stronger and stronger upon me some time to have an opportunity of leading an expedition on a large scale and with academically trained experts in different branches of science to just these regions that I had myself visited and to other little known parts of Central Asia.

When, therefore, in 1926 I saw a possibility of getting financial support for a new expedition to Asia I made up my mind at the outset to take with me young Swedish specialists who could each work at his own subject in the interior of Asia.

In the first chapter of the present work I have given an account of the origin and development of the new great expedition. I myself left Stockholm on October 26th 1926, travelling through Siberia to Peking, which became and remained throughout our chief headquarters. The expedition was wound up on my return home to Stockholm on April 15th 1935.

In the summer of 1935 the Swedish participants in the expedition assembled in my home to discuss the publication of the results obtained and the sum that would be required for this end. We intended to submit an application to the Government, hoping to obtain what we should need in the form of a state grant. According to our agreement with the committee of learned Chinese who had been looking after our interests in Peking, the projected monographs on palaeontology and prehistorical archaeology were to be published in the journal *Palaeontologia Sinica*, edited in China, while all our other works were to be printed and published in Stockholm under the general title: *Reports from the Scientific Expedition to the North-Western Provinces of China under the Leadership of Dr Sven Hedin — The Sino-Swedish Expedition*. In this series, which was calculated to comprise fifty-five volumes, were to be included also the works intended for *Palaeontologia Sinica*.

These, too, were printed in Stockholm and were incorporated in due numerical sequence with the whole series.

The various sciences represented in the series are numbered with Roman numerals and are classified in the following eleven groups:

I. Geography
II. Geodesy
III. Geology
IV. Palaeobotany
V. Invertebrate Palaeontology
VI. Vertebrate Palaeontology
VII. Archaeology
VIII. Ethnography
IX. Meteorology
X. Zoology
XI. Botany.

A freer place is taken by the three volumes belonging to group X, Zoology, as they were published in the *Arkiv för Zoologi* of the Royal Swedish Academy of Sciences.

Group VIII includes other subjects besides pure ethnography, such as descriptions of temples, lamaistic ecclesiastical art, Mongolian songs and music, interpretations of Sakian, Uighur and other ancient manuscripts found by us. Under the heading Archaeology is included the examination of craniological and other osteological material that were found in connection with the archaeological excavations.

The present volumes, bearing the common title »History of the Expedition», may be regarded as an introduction to the whole series, a survey of the course and organization of the expedition and a description of the circumstances under which we travelled, lived and worked in the heart of Asia. In these volumes will be found an account of how the expedition originated and became a reality, and how from 1927 to 1935 it underwent radical changes.

In this History of the Expedition the reader will find that the whole enterprise falls naturally into three different periods, so that strictly speaking we have to do with three separate enterprises, with in part different aims, working program, financial support and membership.

The first part is devoted to descriptions of the original expedition, whose main aim was the founding of an air-line between Berlin and Peking-Shanghai. By the side of the technical tasks scientific work was also carried out, especially in geology, archaeology, meteorology, topography, zoology, botany and physical anthropology. The period covered was from February 1927 to May 1928. The financial support was given by Deutsche Lufthansa. The members were German air-experts, and Swedish and Chinese scientists. In the beginning of every part there is a list of the members in the section of the expedition dealt with in the part in question.

Part II covers the period between the summer of 1928 and the autumn of 1933. This time the working program included only scientific tasks, and the greater part of the financial burden was borne by the Swedish State, although considerable contributions were also made by Mr VINCENT BENDIX, Deutsche Lufthansa, Mr ALBERT APPLETON of Chicago and myself. Most of the members were Swedes, though the staff temporarily included also two Danes, a few Germans and Chinese.

The subject-matter in part III is the motor-car expedition that was made from the autumn of 1933 to the spring of 1935. The expenses of this enterprise were met by the Chinese state. The aim was here to investigate and then submit to the Government in Nanking proposals concerning the laying of two motor-car roads between China proper and the province of Sinkiang. By the side of this main task we also carried on archaeological, zoological, botanical and geographical researches; maps were drawn and a meteorological journal was kept. The staff was Swedish and Chinese.

It will thus be seen that each of the parts is complete in itself. Of the members of the staff, ERIK NORIN, FOLKE BERGMAN, and DAVID HUMMEL were the only ones besides myself who had followed the expedition from the beginning practically to the end. We four thus formed the Old Guard, so to speak, combining the three parts into one whole. The contents of part II of the History of the Expedition doubtless gives the impression of being leaner and less significant than the contents of parts I and III. And yet the greater part, and that the most important, of all the scientific work carried out, or in other words the bulk of the material treated in the planned fifty-five volumes of the series, falls just within the period dealt with in part II. This part figures rather as a unifying frame around all the various researches that were carried out during this period. In the History of the Expedition I have, naturally, only been able to describe the journeys and events in which I myself took part. And while in the case of the events described in parts I and III I was always present myself, it was of course impossible for me to visit all the different groups that in widely separated tracts of Central Asia were working independently and often enough without direct contact with one another. During the years covered by part II, the latter half of 1928, 1929, 1930, 1931, 1932 and up to the autumn of 1933, I functioned as the connecting link and perambulating headquarters as it were, watching over the interests of the expedition and the many part-expeditions with the Swedish and the Chinese authorities. I had therefore often to lead a very mobile existence; and the »headquarters» sometimes found himself in Europe, and sometimes in Asia or America. Stockholm, Urumchi, Peking, Nanking and Chicago were during this period my most frequented resorts. On two occasions I was afloat on the Atlantic and on two others on the Pacific. But even then I was in telegraphic connection with the different parties of the expedition.

The defect from which part II may seem to suffer, in that the scientific work belonging there is missing, will shortly be made good in parts IV and V, which will follow immediately after the History of the Expedition, with which they are intimately connected. In these two parts will be found descriptions by each of the scientifically schooled members of the main features of their journeys and their essential scientific results. These parts were also to have included the résumés of Professor YUAN and Dr PARKER C. CHEN; but owing to the interruption of postal communications by the war we shall probably have to leave them over for the time being. Meantime, we hope that the monographs promised by these two Chinese members will in due course enter into our series. These five parts thus form a whole in themselves, and will thus enable such universities, academies, libraries and geographical societies as cannot afford to acquire all of the projected fifty-five volumes to get a clear survey both of the history of the expedition and of its results.

The material upon which the History of the Expedition is based is fairly comprehensive. The first three chapters I wrote especially for this book in 1939, from my diaries for the period. The subsequent description, from page 75, has been taken partly from the eighty-three letters I wrote in the course of the journey for newspapers and journals, and partly from my detailed letters home; and finally, also, from the six popular works I published during and after the expedition. The description of the years 1930, 1931 and 1932, that I spent in Peking, Stockholm and Chicago, is for the most part based upon diaries and letters.

When, not least on account of failing sight, I found it too much of a task to go through and sift the rich material and from the various original documents select what was essential for this historical account, I addressed myself to my faithful fellow-traveller and friend, FOLKE BERGMAN, and gained his help. As I have mentioned above, he had been with us during the whole expedition. He was familiar with the situation as was no other, and he loved innermost Asia, its desolate and majestic scenery, its many languages and the life on unknown paths. I have fully approved the selection he has made from the scattered sources. The result of FOLKE BERGMAN's laborious and time-consuming work is an even, easily read and clear account of the course of the expedition. Without his aid these three parts could never have seen the light, for no other, either within or — and still less — outside our staff could with such expert knowledge and criticism have selected and brought together the essential features of our great enterprise. I cannot thank him warmly enough for his valuable and sterling cooperation.

Even if this History of the Expedition is thus a mosaic, the innumerable pieces of which have been selected by BERGMAN from notes and books earlier written by myself, it is none the less thanks to him that the work is as complete as it is, for he has on repeated occasions drawn my attention to details that I had either forgotten or misapprehended. He has also made a number of additions in the form of notes, signed with his initials, F. B.

The translation into English has been carried out by Mr DONALD BURTON, Stockholm, in a most careful and accurate way.

As chief editor not only of the three present parts but also of the whole series of our scientific works Dr GÖSTA MONTELL has functioned with great skill and care ever since its commencement in the year 1936. No-one who has not himself had to do with the publication of a big scientific series can have any idea of the patience, the industry and the experience of the technical details of editing that such a post demands. Daily conversations and meetings with the various authors, with the government, the Academy of Science, the publishers and all the institutes that produce maps and illustrations, as well as a thousand and one other cares, take up the best part of the chief editor's time. I cannot easily express my gratitude to GÖSTA MONTELL for the splendid way in which he has performed his responsible and exacting task.

A board appointed by the Royal Academy of Science and whose chairman is Professor HENNING PLEIJEL, the secretary of the Academy, constitutes, in the work of publication and in the application of the state grant, a support for us at the same time as it forms a connecting link between the government and the expedition.

For the photographs to the plates I am indebted to several members of the expedition. Among the innumerable photographs that were taken during our years in Asia BERGMAN and MONTELL have made, as I think, a splendidly representative selection. The drawings included with the text are reproductions of the pencil sketches I made in the field, just as they were, and without any subsequent improvements. Certain of the drawings in part III have been filled in with Chinese ink.

The survey-map appended to part III, showing all the routes taken by the expedition, was drawn under the supervision of Dr ERIK NORIN. The detailed map-material collected by the members of the expedition has been done justice in the big »Hedin Zentralasien-Atlas» that to a scale of 1: 1,000,000 and in 54 sheets is in course of publication at JUSTUS PERTHES in Gotha. On the initiative of the German Government the costs for this atlas are being met by the *Forschungsgemeinschaft der Deutschen Wissenschaft*, a piece of generosity for which I beg to express my warm thanks.

I wish to express my warm sense of gratitude to my sisters, especially my sister ALMA, who, on the Stockholm front, for the whole duration of the expedition looked after our interests, managed our finances, procured and sent out to us instruments and all sorts of items for our equipment, as well as handling the enormous correspondence that grew up between the widely ramifying groups of the expedition and Stockholm. All this work behind the scenes often meant a very considerable nervous strain, especially during those periods when the economic position of the expedition was uncertain and seemed, as indeed it sometimes did, hopeless. During the whole of my absence Stockholm was so to speak a second headquarters, without which the expedition could scarcely have functioned.

In the summer of 1928, when the expedition could not have carried on without a very considerable grant of public Swedish funds, I addressed myself to the King of Sweden with a respectful appeal to this end. His Majesty was pleased both personally and in the government to accord the greatest sympathy to my endeavours; and it is chiefly to the King and to the Crown Prince of Sweden that I and my comrades are indebted for the generous response to this appeal. Also in 1931, when for the second time I submitted a similar appeal, I found in my mother country the support that was needed to carry the aims of the expedition to a happy conclusion.

It is with especial gratitude that we all remember the energetic support and the enlightened and informed good-will that the Crown Prince of Sweden was pleased to accord our enterprise during our long years of work in Asia. And not least in connection with the organizing of the part-expedition under Professor T. J. ARNE to northern Iran and in the procuring of funds for the publishing of the results of that expedition.

And it is my very pleasant duty to tender my humble thanks to the Swedish governments that from 1928 to 1943 rendered possible the carrying out of the Swedish expedition and the publication of its results; to Deutsche Lufthansa, that by its powerful support made possible the phase of the expedition described in part I; and to the government that from 1933—35 had its seat in Nanking under Marshal CHIANG KAI-SHEK and Premier WANG CHING-WEI.

The grant that on the government's proposal in the Riksdag of 1936 was made towards the publication of our scientific results was the largest ever made in Sweden to an enterprise of the sort. This generosity amounted to a proof of confidence on the part of the Swedish people for which we cannot be grateful enough, and that encouraged us enormously.

For those who have read the History of the Expedition and glanced at the twenty-three volumes that have already been published at the time of writing, or December 12th 1942, it will be easy to realize how infinitely grateful I must be to my comrades in the field-work on the soil of Asia, and to all the experts who in the various sciences have helped us in the treatment of collections and observations. It is their merit that the whole of this series of learned works has been realized.

Among the Chinese scholars with whom in Peking we were in daily contact I should like first to mention Professor LIU FU, the chairman of the committee that between 1927 and 1935 watched over our interests, whose too early decease in 1934 was deeply regretted by us, and Professor SIU PING-CH'ANG, the leader of the contingent of Chinese scholars and students who took part in the expedition. To the circle of our best friends belonged also the three doctors V. K. TING, WONG WEN-HAO and HU SHIH, who all represented a high-water mark of contemporary erudition and could undoubtedly be reckoned among the most learned men in China. Dr TING's death by accident in 1936 was an irreparable loss for China, for science and for ourselves.

It is with feelings of melancholy that I think of the two Europeans, the Swede JOE SÖDERBOM and the Balt WALTER BEICK, the Chinese student MA HSIEH-CH'IEN, the Mongol chauffeur DONGORA and the four servants who all lost their lives for the sake of the expedition and in its service. It is with infinite gratitude that we remember them and their work — faithful to the very end. This refers also to those of our Mongol servants who have been gathered to their fathers since the winding up of the expedition, such as MERIN, MENTU, TSERAT, TSERCHI and several others.

The only foreign member who has died since the expedition came to an end is Baron WILHELM MARSCHALL VON BIEBERSTEIN, who was killed in a flying accident in Germany in 1935. The thought of his irrepressible good humour and his friendliness will always remain with us as a living and cherished memory. Our thoughts also go to the young Russian PAUL KONSTANTINOVICH VOROTNIKOV, who served the expedition in various capacities in Sinkiang, and who is reported to have come to an unhappy end at Aqsu in the restless times during the great civil war.

Before my inner eye at this moment passes a whole cavalcade of Asiatics who served the expedition faithfully — Chinese, Mongols, East Turkis, Russians, Tartars, Kirghiz, Tibetans, Persians and representatives of other peoples. How willingly would I not now let them feel and understand, in a comradely hand-shake, how deeply I appreciated their faithfulness!

With the same sadness my thoughts revert again and again to the patient camels, who year after year and for thousands of kilometers bore our burdens over deserts and steppes — without other reward than finally to succumb under them.

During these years I had learned how much easier it is to cross the continent in different directions alone, with a few servants, than to lead a great expedition, a campaign with troops of five different nationalities. We often had dark times to go through, and great difficulties to overcome. But now, on looking back over those work-filled years, we find that the cares and troubles have paled, and gradually they disappear altogether. We forget how the sandstorm lashed our faces as with the cruel whips of the air-spirits, and how the drift-snow whirled around our tents like outlawed demons.

Out of this medley of kaleidoscopic recollections, as the years glide past, the happy memories of our expedition stand out in clearer and sharper outline. We see them against the background of the eternal majesty of the Asiatic deserts and the grandeur of an infinite solitude. And still in the distance we hear the dying clang of the caravan bells under the twinkling stars of the silent desert night.

Stockholm, December 12th 1942.

Sven Hedin

EDITORIAL REMARKS

BY FOLKE BERGMAN

Dr Hedin has in his preface already described how this work originated. For the sake of completeness it may be added that parts I and II are here translated afresh, with the exception of the chapter on Jehol in part II, which in a thoroughly revised form has been grafted onto the present work from the English edition of *Jehol, City of Emperors*. Part III is based upon the English editions of *The Silk Road, Big Horse's Flight* and *The Wandering Lake*. Here, too, however, the translator, Mr Donald Burton, has gone through the text and brought it more nearly into line with the newly translated manuscript.

I will take this opportunity of expressing to my friend Don Burton my warm thanks for his great willingness to discuss in detail all doubtful questions.

The notes that I have added might easily have been multiplied, but this would have upset the balance of the work. Some of them, too, might as easily have been omitted.

It remains to say a few words about the transcription of the place-names and names of persons, a matter that has sometimes given rise to considerable difficulties and even occasionally proved impossible to resolve with complete correctness or consistency.

For the *Chinese* names a slightly simplified form of Wade's well-known system has been used. Forms of such long standing as 'Peking' and 'Sinkiang' etc. have been retained. As regards the names of persons, where the private transcription of the owner has been known this has been used (as in the case of Professor Siu, whose family name would otherwise have been written Hsü). Professor Bernhard Karlgren has given me many valuable hints.

For *Turki* and *Russian* names the Royal Geographical Society's *Alphabets of Foreign Languages* has been consulted, in which connection Dr Gunnar Jarring, Lund, Dr Kaare Grønbech, Copenhagen, and Professor Knut Knutsson, Stockholm, have placed their special knowledge at my disposal.

As to the transcription of *Mongol* names I have had the privilege of using a system created by Dr Grønbech. Unfortunately we have not been able to discuss these questions orally; this would certainly have enabled us to clear up many dubious points. As it is, our discussions have had to be carried on by correspondence. In the field, of course, as we were none of us linguists, we used the simplest possible Swedish transcription, writing down the names as they sounded in our ears. Here, many of these names appear in a more standardized form; and some of them wear a very different aspect from that they bore in *e. g.* the previous popular publications. In some cases I have drawn attention to the fact in a note. In the Index I have given several forms of some names.

In two cases I have definitely departed from Dr GRØNBECH's system. In some names I have preferred *ö* to *u*, and I have written *nor* for »lake» and not *nur*. The latter departure I defend by adducing the fact that *nor* has become such a standing form for those of us who deal with Mongolian geography that it is now scarcely possible to change. Another inconsistency is that some names have been given in conformity with the written language and others with the considerably simpler spoken language. The Mongol names in this work thus provide rather a motley from the point of view of the linguist, although consistency has been striven for. I think, however, that travellers should find it possible to identify all the names, both Mongol and Turki — if they are pronounced tolerably correctly.

The consonants are pronounced as in English and the vowels as in Italian, except in Mongol words, where *u* covers two different sounds: the first resembling German *u*, or the English *u* in *put* (but somewhat palatalized as in Norwegian), and the second being a very guttural vowel, near the vowel-sound of the English *bought*. Other letters that may give rise to difficulties are explained below:

ai in some Mongol words in the modern dialect is like *è* in French *mère* or *a* in English *bad*,

gh guttural, *g* now closed, now open, is like *γ* in modern Greek,

j in Chinese and Russian is equivalent to the French *j*, otherwise as in English,

kh hard guttural as in German *ach*,

ö is very close to the English vowel-sound in *fur*,

q in Turki, a guttural k.

In Mongolian names the stress is on the first syllable.

The use of hyphens is unhappy from the linguistic point of view, but it simplifies matters for the general reader.

In many places Dr HEDIN has himself provided the translation of names, and it would not have been difficult to give renderings for the great majority; but this must wait until the linguists are ready to tackle all the names from the etymological point of view in, as I hope, a special monograph.

LIST OF MEMBERS

1927–1928

LEADER: SVEN HEDIN

Swedish members:

Bergman, Folke
Hummel, David
Larson, Frans August
Norin, Erik
Söderbom, Georg

Danish member:

Haslund-Christensen, Henning

German members:

Dettmann, Hans
Haude, Waldemar
Hempel, Claus
Heyder, Walter
Kaull, Bodo v.
Lieberenz, Paul
Marschall v. Bieberstein, Wilhelm
Massenbach, Eugen v.
Mühlenweg, Fritz
Walz, Franz
Zimmermann, Eduard

Chinese members:

Chan Fan-hsün
Huang Wen-pi
Kung Yuan-chung
Li Hsien-chih
Liu Yen-huai
Ma Hsieh-ch'ien
Siu Ping-ch'ang
Ting Tao-heng
Ts'ui He-feng
Yuan fu-li

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I. THE ORIGIN

The expedition in Central Asia, whose organization, course and often rather dramatic events are to be described in the present work, began at the end of the year 1926. Before describing the actual journey, it may not be out of place to give some account of how and why the enterprise came into being.

On September 5th 1925 I had the first discussions with Professor HUGO JUNKERS concerning a plan to undertake a flight from Germany to China with three machines, chiefly with the idea of familiarizing China and her leading men with the importance of air traffic in that country. Professor JUNKERS was to meet all expenses for this expedition, at the end of which a couple of the planes with their crews were to be placed at my disposal for various flights for scientific purposes. These were to comprise reconnoitring and surveying trips, for which I afterwards worked out proposals with sketch-maps.

On account of financial difficulties during the first half of 1926, however, Professor JUNKERS was obliged to give up his plans for that year. The agreements he had made with me were then taken over with the same generosity and far-sightedness by Deutsche Lufthansa.

ARRANGEMENTS WITH LUFTHANSA

The final arrangement was that an aero-technical expedition under my leadership should set out for East Asia with the object of opening an air-traffic route between Germany and China via Central Asia. Lufthansa was to meet the expenses, and my request that two or three Swedish scientists be allowed to accompany us was granted with the greatest generosity.

From the 15th to the 24th September 1926 I stayed in Berlin to discuss the organization, membership, equipment and financing of the expedition with Lufthansa's leading men — Messrs. MERKEL, KOCH, WRONSKY, MILCH, VON SCHRÖDER, and others.

It was decided that the expedition should be regarded as Swedish, and that it should be placed, during its stay in China, under the protection of the Swedish Legation. The German members should comprise a number of aviation experts, a meteorologist, a film operator and cameraman and an accountant. Four depots, each of which should have its own wireless station and meteorological observatory, were to be established between Peking and Urumchi. At each depot two of the German members were to be left behind until the conclusion of the expedition, that is, as we then reckoned, for one or one and a half years.

Professor JUNKERS' original plan had been to supply the depot with fuel by air, in petrol-tankers; but it was found that this would be impracticable on account of the long distances, and we realized the necessity of transporting petrol to the depots with camels from the west and the east. Thus, at an early stage in our discussions and calculations it was clear that the enterprise must fall into three different expeditions:

1. a preliminary expedition with camel caravans for ground service along the whole of the projected air-route. This would include the selection of suitable depots, investigation and topographical description of the ground, etc.;
2. a special expedition for the transport of the petrol for the first flights; and
3. the first flight from Berlin and back.

In our discussions we also went over the costs for equipment, instruments, caravans, journeys to China, reports and telegrams, and the salaries of those participating etc. For my own part, I refused a salary, but stipulated that I should have the right to narrate the adventures of the expedition in popular form and that other members should not be entitled to publish their reminiscences until two years later. I also reserved to myself the right to publish in a special series, after the conclusion of the expedition, the results of all research carried out by the scientifically trained members. It is this series, *Reports from the Scientific Expedition to the North-Western Provinces of China under the Leadership of Dr* SVEN HEDIN, that since 1937 has been under publication at the expense of the Swedish State and private patrons.

A science that the aviation experts had very close to their hearts was meteorology. They hoped for as comprehensive a survey as possible of the prevailing winds, cloudiness, sandstorms and snow-storms etc. — in a word, all the climatic and meteorological factors that must be considered in connection with an air-route. Professor GEORGII was at first entrusted with the work in this sphere; and he also worked out a plan for the measurement of gravitational forces during the journey. He was, however, afterwards prevented by another important commission from taking part, and Dr WALDEMAR HAUDE was appointed in his stead.

* * *

When now, after thirteen years, and against the background of the great wars that are raging in Europe and Asia, I recall our peaceful discussions in Berlin, I am only too sadly conscious of the changes for the worse that have since taken place all over the world. We dreamed of rapid and easy communications between peoples and continents; we thought that we should meet with understanding, and that people would realize that our efforts were directed towards peace and brotherhood between countries and kingdoms — nothing, it seemed, could be easier than to translate our thoroughly thought-out intentions into action. If we had had any idea of the resistance and the mistrust with which we were afterwards met in various quarters, we should undoubtedly have drawn up the plan for the entire enterprise in a very different way. It would have been better if the way had been first paved for us along diplomatic channels. As it was, the negotiations with the Chinese Government were left until the whole heavy apparatus of the expedition had already been set in motion. It might also perhaps have been better to have begun from the west, from Kulja and Urumchi, and to have made the preliminary expedition with a more mobile caravan and fewer participants. But it would then have been impossible to leave observers behind at the four meteorological stations. Above all, it was considered fitting and necessary that an enterprise of such dimensions should set out from the capital of the country and under the protection of the Government, which at that time had its seat in North China. We did not even consider any other alternatives, and when we afterwards found ourselves actually at grips with the difficulties there was nothing for it but to try and overcome them. The fact of the matter was, that during the discussions in Berlin we saw the situation in much too optimistic a light. We calculated that the stay in Peking would last only a couple of months, that the preliminary caravan journey could be accomplished in six months, and the first flight be undertaken in the autumn of 1927. At the turn of the year, 1927—1928, the whole program was to have been completed.

We had not reckoned, however, with the slowness of the negotiations in China; though the cautiousness of the authorities was perfectly natural, especially in connection with such an important and radical innovation as the introduction of aeroplanes into Central Asia and the establishing of air-lines in China.

Little did we then suspect that it would take six years, or till the end of June 1933, before the first flights through innermost Asia could be carried out, by flight-captains LUTZ and Count SCHACK. And even these remained, for the time, the first and only ones. Four more years were to elapse before, in the late summer of 1937, one of Lufthansa's planes was flown from Berlin to Sian. As the Russian route was at this time closed, this bold flight under Baron VON GABLENZ was directed over Baghdad, Teheran and Qabul, the Hindukush, the Pamir and southern Eastern Turkistan. In May 1938 the route between Berlin and Qabul was opened.

In the present political situation in Europe it is of course as impossible to open the Berlin-Shanghai line as it proved for us to open the northern line.

The benefits of a peaceful air-communication between Europe and East Asia thus share, and will continue to share — for God knows how long — the sad lot of numberless enterprises in the service of mankind that are drowned in the maelstrom of present world events — a maelstrom that swallows up all reasonable work for human progress.

Accompanied by one of the German aviation experts, Major EDUARD ZIMMERMANN, I left Berlin on October 31st, 1926. Taking the trans-Siberian route via Harbin and Mukden, we arrived in Peking on November 20th.

II. IN PEKING

In Peking began the most tedious period of the whole course of the expedition, in the form of five and a half months of negotiations with the Government and with the leading men in the scientific world. The Swedish Minister, OSCAR EWERLÖF, was at that time still in Tokyo, while Baron CARL LEIJONHUFVUD was acting as *chargé d'affaires* in Peking. The expedition stood, as has already been mentioned, under their protection. Dr BOYÉ, the German Minister, who also met us with the greatest good-will, was more in the background.

Only a few days before my arrival in Peking, after his journey in North China, H. R. H the Crown Prince of Sweden had left Shanghai. He had taken up the cudgels for the expedition with great good-will in conversations with Dr WELLINGTON KOO and the vice-minister for Foreign Affairs, Dr WANG YIN-T'AI.

After the Crown Prince's departure Professor J. G. ANDERSSON returned to Peking, and I cannot sufficiently thank him for the indefatigable way in which he gave his time and energies to help our expedition and give it as happy and advantageous a start as possible. To give the broad lines of my recollections and impressions of this period may be of historical interest, for not only was my expedition begun during the memorable and exciting period when fresh winds bearing nationalistic ideas came sweeping over China from the south, but it was also one of the last — if not the very last — to be carried out undisturbed before the Japanese invasion, in 1937, swept like a storm over large parts of China, changing all the old order of things, laying a heavy hand on the scientific world, and introducing what the Japanese themselves have called »the new order in East Asia». Only 15 years had elapsed since the fall of the Manchu dynasty and the inception of the republic. Unrest and dissensions were still rife between South and North China. How different is everything now, as compared with prevailing conditions then, and how impossible it would now be to carry out such an expedition as ours! Absolutely unthinkable! The position of the whites is already quite other than it was in the years immediately preceding the war in 1937. Without Japanese permission it would be impossible to set off for the interior. Moreover, how far could one proceed in inmost Asia? The whole of Sinkiang, where we moved freely right up to

1932, is now the object of Soviet Russian 'peaceful penetration', and will without doubt soon stand in the same relation to Moscow as Outer Mongolia. All this and many other changes in the interior of Asia prove clearly enough that here, too, a new era, a new distribution of power, has begun. I therefore think that as our enterprise falls, so to speak, between two epochs in China's history, and is the last of a long series of large-scale expeditions in Central Asia, a certain interest attaches to the preliminaries before we actually set out.

VISIT TO WONG WEN-HAO

On November 25th Professor ANDERSSON and I paid a visit to our mutual friend, the head of the Geological Survey of China, Dr WONG WEN-HAO, in his institute in the western quarter of Peking. In Dr WONG the expedition and all its members acquired a faithful, enlightened and warmly interested friend, who never tired of lending his influential support and furthered our efforts in every way.

In the very first conversation that Professor ANDERSSON and I had with Dr WONG we drew up the main lines for the work of the expedition, the collaboration with Chinese scientists and the matter of publication. He was especially desirous that Chinese experts should co-operate in the setting up and investigation of the palaeontological collections, and that all the palaeontological results should be published in the periodical »Palaeontologia Sinica», edited in Peking. Concerning the permission of the Government to carry out the preliminary expedition to Sinkiang, he advised me to submit a written statement of our plans to the Minister for Foreign Affairs, Dr WELLINGTON KOO. One of Dr WONG's proposals was to the effect that a couple of Chinese experts should be given an opportunity of taking part in the expedition.

POLITICAL SITUATION

I had not been in Peking for many days before the first rumours of disturbances and unrest began to fill my ears. In the beginning of December it was feared that the Reds, (the Southerners), would surround Peking and accord the Europeans something of the same treatment as was meted out during the Boxer Rising of the Summer of 1900. Both Chinese and Europeans felt that something was in the air, and one noted the first gusts from the storm of political reformation that came sweeping up from South China — heralded by Kuomintang or »the National People's Party».

To launch a large-scale scientific expedition in a whirl of political strife and a struggle for power between different parties was no light task, and I soon realized that I should need all the diplomacy and patience I could muster.

While Professor ANDERSSON and I concentrated chiefly on the scientific line, having in Dr WONG our most powerful advocate, our own Minister, OSCAR EWERLÖF, was my counsellor and support in negotiations with the Government and other authorities. Our first visit was to Dr WELLINGTON KOO, to whom we gave a detailed account of the whole plan. To the first part of the plan, the caravan journey, he had nothing to object, but he thought that the military authorities would probably take exception to the flying. He asked for an account of the plan in writing. This was drawn up and submitted after a couple of days.

On December 4th EWERLÖF and I paid a visit to the Minister of Aviation, CHANG HOU-HUANG, who took up the idea of an air-line between China and Europe with the liveliest interest. A Chinese officer should take part in a first trial flight, although great caution was called for in tracts belonging to FENG YÜ-HSIANG's sphere of interest, where Chinese participation might jeopardize the whole enterprise. He also considered that the preliminary caravan expedition was not without risk of interference from FENG's side, and advised an escort. Finally, he asked me not to mention a word about the flying until after the conclusion of the preliminary expedition. If it came to the ears of the press and thus to the public we should be made the objects of suspicion and meet with great difficulties.

Among the political precautionary measures that had to be observed was the giving up of the idea of establishing four permanent wireless stations in the interior of Asia. This relieved me of one worry, for wireless stations would have required a special staff of experts and additional expenses. Such stations would in any case have been of value only in connection with a permanently organized air-line, and as the Government stipulated that the flying part of our scheme was not to be brought up at all, the wireless question lapsed automatically. I was informed, moreover, that the United States and Japan were just then competing for concessions for wireless stations in China.

EXPEDITION SANCTIONED BY MINISTRY OF FOREIGN AFFAIRS

On December 30th we paid another visit to the vice-minister for Foreign Affairs, WANG YIN-T'AI, who now and in the sequel proved to be a real friend of the expedition. He explained that it would now not be long before the official permit for the preliminary expedition arrived. He kept his word, and on January 1st 1927 the reply of the Government was sent to the Swedish legation. It was translated by WONG WEN-HÁO as follows:

»According to the scheme of your expedition sent by the Swedish Minister and yourselves, a party of Swedish and Chinese scientists including specialists of aviation intend to go to the two provinces, Kansu and Sinkiang, to make archaeological researches. A first expedition using camels and horses intends to leave Peking at the beginning of 1927 and to study along the road the possibility of using aeroplanes for researches in a next (second) expedition. You declared that you were engaged to do no unlawful action and to take all responsibility for any accident that might happen as a consequence of the researches. The Chinese Government in view of encouraging the archaeological investigations approves of the scheme of the first expedition, and has already instructed the respective local authorities for protection and help at their discretion. Travelling passport will be issued to you when you have forwarded to the Ministry the names and qualifications of the members of the expedition.

This is to let you know the above contents and

Wishing you good health

Wai-chiao-pu.»

All that I had desired was thus granted without reservation. Although the three ministers with whom I had already spoken had expressly stated that nothing was to be mentioned about any aeroplanes, this question is also touched upon in the Government's reply. A couple of days later the legation received General CHANG HOU-HUANG's reply to the note of the Government, in which, characteristically enough, he approved of the flying, but advised that the discussion of this question be postponed until after the preliminary expedition had been accomplished and the unrest in the country had subsided.

I sent a cable with the Government's reply to Herr MILCH of Lufthansa, and this in its turn was the signal for all the German and Swedish members to set out in all haste for Peking, via Siberia and Manchuria.

The foreign diplomats and the white residents in general, especially the members of ROY CHAPMAN ANDREWS's great expedition, were astonished at the rapidity with which we had succeeded in getting permission for the caravan journey. Certain after-effects of the World War and the Peace of Versailles were regarded as partly responsible for this. Since Germany had been deprived of her exterritorial right, the Germans were on the same footing as the Chinese and stood under Chinese jurisdiction. When, therefore, the hatred of foreigners swept like a wave from South China northwards, the Germans enjoyed a certain measure of immunity that was denied to nationals from other great powers. This was an advantage for me, as the leader of an expedition with a predominantly German membership. Swedish citizenship was also an asset, for it was generally known that Sweden had never advanced at China's expense.

From various quarters I heard reports of the mistrust and speculation with which my intentions were discussed, especially in English circles. Very fortunately, as it happened, I knew Mr DUGDALE, the private secretary of the new British

Minister, Sir MILES LAMPSON, who had arrived in Peking in the middle of December. At a dinner at his house, Sir ERIC TEICHMAN and Mr O'MALLEY as well as other members of the British Legation being present, I narrated the whole story of the enterprise — its origin, development and aims. Such openness could not fail to make an impression on those present. I myself recall this particular evening with pleasure, as it brought me into closer contact with a select circle of real English gentlemen, who showed me both understanding and sympathy, and manifested great interest in my far-reaching plans. Mr O'MALLEY was kind enough to give me an opportunity of studying General PEREIRA's map of his journey from Peking to Urumchi, which he had in his keeping and which covered the very tracts to which I intended to travel.

KUOMINTANG ADVANCING

Meanwhile — China was seething. Kuomintang was gaining ground, and members both of the Government and of CHANG TSO-LIN's circle sympathized with this new political view, which reckoned its most reliable friends among professors and students. One felt that a new era was dawning over the old China. The nationalistic EUGENE CHEN coined the maxim: »A people that is determined not to die cannot live in peace with its conquerors — it chooses its opportunity to break free» — words that were directed against the foreigners in China.

VISIT TO CHANG TSO-LIN

Marshal CHANG TSO-LIN, who was hostile to Soviet Russia and to Japan, governed Manchuria and North China with skill and firmness, but felt the ground trembling beneath his feet. Initiated Europeans, among them the sinologue IVANOV, did not believe that he had any future in China. When we discussed what would happen after the preliminary expedition we could not avoid the thought that by that time neither CHANG TSO-LIN nor his government would be in possession of power.

At the end of January I tried to obtain an audience with the marshal in his head-quarters in the western part of Peking. It was difficult to get hold of him, as he was continuously engaged in counsels of war or in reviewing troops. His secretary for foreign affairs, Mr WU CHIN (OU TSING), stated my desires to his chief, who answered simply: »What shall I speak with him about — I don't understand such learned matters». But on January 30th he received me and we had half an hour's conversation. He promised to support the preliminary expedition in every way. He also promised to wire to the Governor-General of Sinkiang, Marshal YANG TSENG-HSIN, concerning the impending arrival and aims of the expedition, afterwards sending me a copy of this wire, and to give me a letter of introduction to YANG. We took it for granted that this document with the marshal's own red seal would open all doors for us in the distant province in the west.

INCREASED ANTI-FOREIGN CAMPAIGN

Meantime, the political tension was increasing, and nationalism and the hatred of foreigners were growing stronger. Many, among them the Chief of the General Staff, YANG YÜ-TING, desired a compromise between North and South China, but stipulated that Kanton should dismiss its Russian advisers. Some of our European friends considered that the political unrest was to our advantage, in so far as no one knew what was going to happen or how the new régime from the south would look upon a European expedition; the politicians had neither time nor inclination to enter with any thoroughness into our affairs, which in relation to the great events of the moment were totally insignificant. All the more powerfully did these events affect our plans. Someone suggested that if FENG YÜ-HSIANG and CHANG TSO-LIN's troop movements obstructed the way for our departure, we could always journey to Novo Sibirsk, Semipalatinsk and Urumchi, and embark on the preliminary expedition from the west.

PROCURING HYDROGEN GAS

Dr WALDEMAR HAUDE, the meteorologist of the expedition, had expressed the desire with the help of pilot balloons to investigate wind-currents in the higher air-strata above innermost Asia, where such investigations had never before been made. As it would have been much too time-consuming and risky to send cylinders of hydrogen gas from Europe, Lufthansa wired to me asking me to find out whether the necessary supply of compressed hydrogen gas could be procured in East Asia. I received a reply in the affirmative from Japan, but it proved, nevertheless, to be no easy matter to transport the cylinders to Tientsin and Peking, as the captains of the cargo-boats were dubious about taking such a highly explosive substance. Finally, however, a small coastal boat was requisitioned and we got the cylinders over to Tientsin and afterwards Pao-t'ou without mishap.

CARAVAN LEADER

As the caravan leader of the expedition I engaged my friend and countryman F. A. LARSON from Kalgan, »The Duke of Mongolia». He had 35 years' experience of Asiatic roads and of the people, spoke Mongolian and Chinese, had for several decades lived as a Mongolian among Mongolians, and had expert knowledge of horses and camels. He was therefore a splendid acquisition; and the setting up of a large caravan could not have been entrusted to better or more experienced hands. Both in North China and in Mongolia he was held in high esteem. He had served as adviser to the Mongolian Government in Urga and as adviser in Mongolian affairs to the Chinese Government in Peking. I myself had known him from Kalgan in 1897 and from Peking and Urga in 1923. To his lot fell the task of employing Chinese boys, cooks, coolies and camel drivers, as well as the business of determining their wages and arranging for their equipment — in a word, he had to deal with all the numberless practical matters that arise in connection with the setting up of a large caravan for a long journey. As at an early stage it became clear that the expedition would fall into several groups, owing especially to the different aims and desires of the scientists, LARSON realized that he could not supervise the whole outfit alone, and would require a couple of assistants. He himself proposed the appointment of a young Dane, Lieutenant HENNING HASLUND-CHRISTENSEN, who had lived in Mongolia and China for four years and spoke Mongolian. HASLUND was at this time employed in the British-American Tobacco Co., and it was thanks to him that the expedition received a gift of 300,000 cigarettes from this company.

In Pao-t'ou LARSON and Major ZIMMERMANN rented a house for the expedition's account. Mr. SVENSSON, the Swedish missionary, and two boys were to be in charge of the house for as long as it might be needed. LARSON also ordered eleven Mongolian tents, blue with white Chinese ornaments on the canvas, as well as sheepskin coats and sleeping bags of the same material for all members of the expedition.

Pao-t'ou had now been evacuated by FENG YÜ-HSIANG's troops and taken over by CHANG TSO-LIN's forces.

Major ZIMMERMANN and LARSON were sent to Tientsin to purchase supplies and other necessaries. LARSON had done the same service for ROY CHAPMAN ANDREWS's expedition. They bought beans, dried milk, butter, cheese, fish, macaroni, jam etc., sugar, coffee, tea, salt, spices, rice, flour and so forth, as well as cooking utensils and crockery.

ARRIVAL OF EUROPEAN STAFF

On February 6th five of the German members arrived in Peking. These were Barons WILHELM MARSCHALL VON BIEBERSTEIN and EUGEN V. MASSENBACH, Majors FRANZ WALZ and WALTER HEYDER and Herr BODO V. KAULL. The two first-named of these gentlemen were immediately despatched to Tientsin to help LARSON with the purchasing of provisions.

Six days later, the three Swedish scientists arrived in Peking, namely, Dr ERIK NORIN, geologist, Dr DAVID HUMMEL, physician, and Mr FOLKE BERGMAN, archaeologist. At the same time Dr WALDEMAR HAUDE, the meteorologist, and the two aviators, Major CLAUS HEMPEL and Herr HANS DETTMANN, also arrived.

With the arrival in Peking of Major JOB V. DEWALL, another of the aviators of the expedition, Herr PAUL LIEBERENZ, the film operator, and Herr FRITZ MÜHLENWEG, the accountant, the whole of the European staff was complete.

Dr PAUL STEVENSON of the Peking Union Medical College gave Dr HUMMEL and one or two other members of the expedition instruction in anthropometric and craniological measurements. He afterwards had the kindness to copy out this course of instruction, supply it with illustrations and hectograph it. He also placed at our disposal all the instruments necessary for anthropological measurements.

ARRANGEMENTS FOR PASSPORTS AND TRANSPORT

As regards passports, license to carry arms, and such matters, I had daily conferences with the vice-minister for Foreign Affairs, the Ministers of War and Transport and their subordinates. Every member of the expedition was entitled to carry a rifle with 600 rounds and a pistol with 200. We also obtained permission to take seven shot-guns with corresponding ammunition. For the journey from Peking to Pao-t'ou we asked for two luggage-vans and a carriage. Besides passports for ourselves and special license for arms we also needed passports in Mongolian for journeys through Inner Mongolia. To give an account of our innumerable conferences in connection with permits and privileges, such as duty exemption for the forwarding of our heavy baggage from Tientsin to Pao-t'ou, or concerning railway-carriages, our request for which was met by the statement that everything on wheels was on the way to Honan, having been requisitioned for CHANG-TSO-LIN'S troop movements — to describe the course and development of all these tedious questions would take up more space than they deserve. The upshot was, in any case, that we were granted the vans and carriage we had requested, and that the whole of our baggage arrived intact in Pao-t'ou, even if this transport cost several thousand dollars.

Amongst other necessary preliminaries was the compulsory innoculation of all the Europeans against typhoid and paratyphoid.

SOME PROMINENT SCIENTISTS IN PEKING

At about this time Dr V. K. TING arrived in Peking from Shanghai. Besides being, along with Dr WONG WEN-HAO, one of the chief pillars of support of the Geological Survey of China, Dr TING was, undoubtedly, one of the keenest intelligences in the Middle Kingdom. He was no less acute in his own particular branch of natural science than he was clear-sighted, intelligent and sensible in political

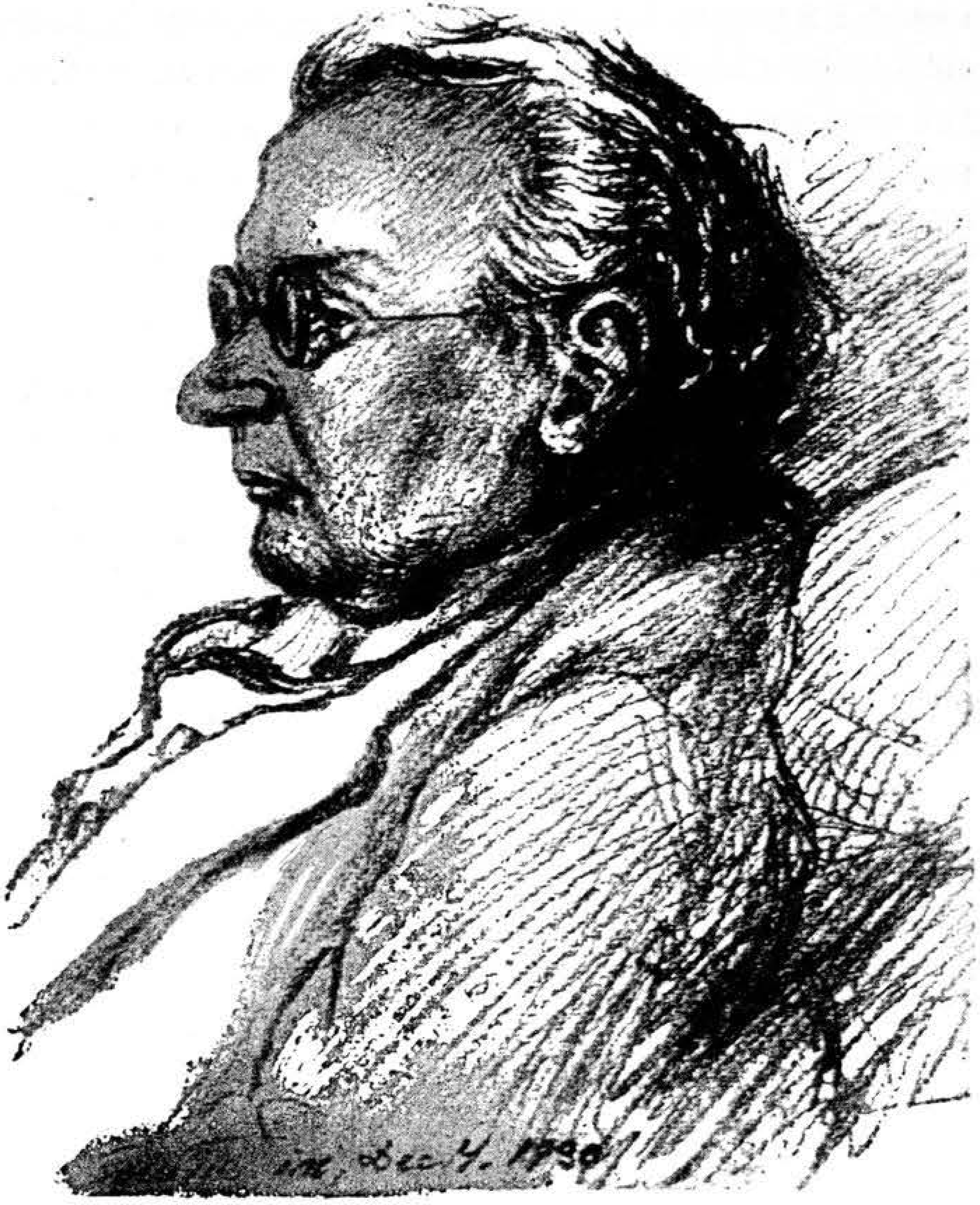

Fig. 1. Professor Amadeus **Grabau**

and social questions, and he possessed extraordinarily comprehensive erudition, not only in Chinese but also in Occidental spheres of knowledge. In his society one took part in a veritable feast of wit, and his supply of quips and whimsicalities was inexhaustible. For me personally, who had known Dr TING in former days, it was now a great pleasure and a real gain to see him once more, and to find in him a faithful ally and an indefatigable support in the difficult times that were approaching. The news of his death, ten years later, was a source of deep grief to me, though I had the melancholy consolation of being invited by his countrymen to write a memorial to my friend in the book that was written and dedicated to his memory. In him China lost one of her finest sons, and I a real and faithful friend.

I have already briefly mentioned the members of the diplomatic corps in whose homes, especially during my stay in Peking, I enjoyed the greatest hospitality and sympathy — this applies particularly to members of the Swedish and German, Norwegian and Danish, British and American Legations.

Among the scholars whose society was for me a constant source of encouragement, enlightenment and support, I will only mention the German-American, Professor Amadeus Grabau, the world-famous palaeontologist, held in the highest esteem by Chinese and whites alike. His hospitable home was always open to all the pioneers of education and culture in Peking. During a later stage of our expedition Grabau also proved a powerful support for two of my Swedish palaeontologists, and he took upon himself the task of setting up and classifying certain of our collections.

In the Geological Survey, at Professor Grabau's house, and at the pleasant and instructive meetings we had in the homes of Drs Wong, Ting and other learned Chinese, we often met the French Jesuit Father Teilhard de Chardin, who was equally well known as geologist, palaeontologist and archaeologist. Père Teilhard is one of my friends in Peking that I remember with particular gratitude; and I shall never forget the powerful and encouraging moral support he always lent me when the prospects for the execution of my plans seemed blackest and others considered the position as hopeless.

CONTRACT WITH THE GEOLOGICAL SURVEY

Professor Andersson and I had frequent conferences with Dr Wong Wen-hao. Between Wong and the expedition a contract was drawn up to the same effect as that previously signed by Professor Andersson on behalf of the Swedish China Committee, whose chairman was the Crown Prince. The most important point was that all finds of archaeological, palaeontological and geological objects should remain in China, a stipulation that from the Chinese point of view was understandable enough. Dr Wong expressed the desire that the two young geologists Wang and Chao, together with an archaeologist, should be allowed to accompany the expedition, a proposal in which we concurred the more readily as it was only to our advantage to have educated and competent Chinese in our ranks. The expedition therefore received the name »The Sino-Swedish Expedition».

In this way our own situation cleared, while the political clouds darkened over our heads. Full of subtle charm and stately as always, the ancient imperial city encompassed us with its walls, its palaces, temples and towers; yet all of us longed to get away from the den of intrigue and gossip into which it was turned by the human greed for power and influence, by envy, avarice and suspicion. We longed to get away to the wonderfully uplifting stillness and quiet of the desert, to our labours in the service of research and to the performance of our chief mission — to pave the way for the aeroplanes that were to form connecting links between Germany and China, between Europe and the Far East.

When, on March 4th, everything seemed clear, I wired to Larson, in Pao-t'ou, instructing him to set about the immediate purchase of the two hundred camels we should need. None of us saw anything like an omen in the news of the cancelling of the permit that had been granted to the Englishman, Captain Mc Callum, to travel by car through Kansu and Sinkiang to Kashgar.[1]

BEGINNING OF CHINESE OPPOSITION

March 6th was a critical day in the history of the expedition. On the afternoon of this day Professor Andersson came to call on me, and it was not difficult to see that he was the bearer of anything but good news. He told me that a large number of learned men, professors, students, directors of museums and others had had a stormy meeting on the previous evening, the subject of the discussion being the activity of Occidental explorers and scientific expeditions in China. The most energetic action against all enterprises of this sort had been resolved upon. Above all, foreigners were to be forbidden to carry out archaeological excavations and to take away palaeontological collections. As the expedition of which I was the leader happened to be in Peking at that time, and on the point of setting out for the interior, it was made the object of the first attack. It was known that the use of aeroplanes was an integral part of our program, and the meeting had therefore also expressed its disapproval of foreign flights over Chinese territory.

Professor Andersson had got his information from our friends Dr V. K. Ting and Dr Wong Wen-hao, who were also targets of the opposition in so far as it was hostile to The Geological Survey of China, which now ran the risk of losing its annual subsidy from The Boxer Indemnity Fund. The insurgent scientists could not forgive Ting and Wong for the great sympathy and active spirit of helpfulness with which they had embraced the cause of Swedish scientific enterprises in China.

As Professor Andersson was the representative of the Swedish China Committee, his work also was singled out by the opposition; and I regret that I was thus involuntarily the cause of the inconveniences and risks to which the China Committee was exposed. On the same day we heard that Roy Chapman Andrews's expedition had also been inhibited. The blow was thus not directed only against us, but against all occidental expeditions.

During the whole winter, from November 20th to March 6th, our plans had gone forward almost without a hitch, and it was not without justice that someone had remarked: »This is just a bit too good to be true!» We had, in fact, not met

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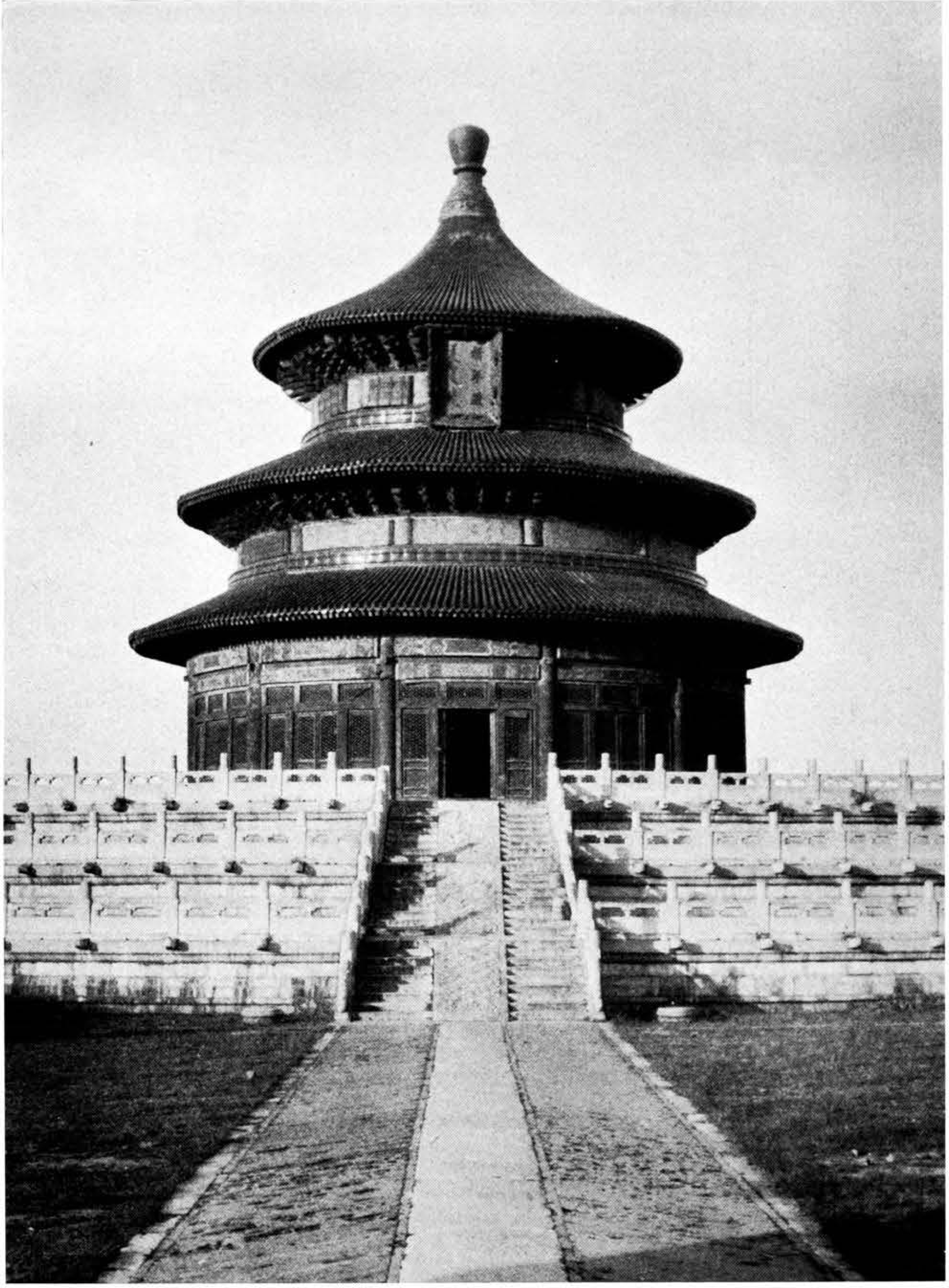
[1] This cancelling of the journey was caused by the British Legation. The planned motor trip has a certain bearing on our expedition in so far as the petrol transport to Ning-hsia by camel was to be entrusted to a young German, Herr Manfred Bökenkamp, who joined us in 1930. A description of Captain McCallum's subsequent journey from Peking via Indochina and overland from India to Calais by motor car is to be found in the *Journal of the Central Asiatic Society*, Vol. XVI: II, London 1929. F. B.

東洋文庫

with any difficulties worth mentioning. The conditions that Professor ANDERSSON had long before secured for the work of the Swedish China Committee in the country had also been granted for my expedition. But just at this time Kuomintang, or »The People's National Party», released an anti-foreign campaign and a wave of nationalism that came sweeping up from South China, and that in its limitless self-confidence preached the doctrine that the Chinese were perfectly well able to manage their own affairs in all spheres of activity — they needed no European help. A couple of recently concluded expeditions, especially ANDERSSON's and ANDREWS's, had borne in upon the learned Chinese world the fact that their native soil contained a wealth of palaeontological, archaeological and other objects of inestimable scientific value; and now, when this new wave of nationalism set their minds and their pride afire, they asserted — with perfect justice, from the Chinese point of view — that they themselves had more right to reap these harvests than representatives of foreign nations. At the same time they raised the equally natural claim that relics of China's geological and human history should not be taken from their rightful owners, but should hereinafter belong to China and be preserved in Chinese museums.

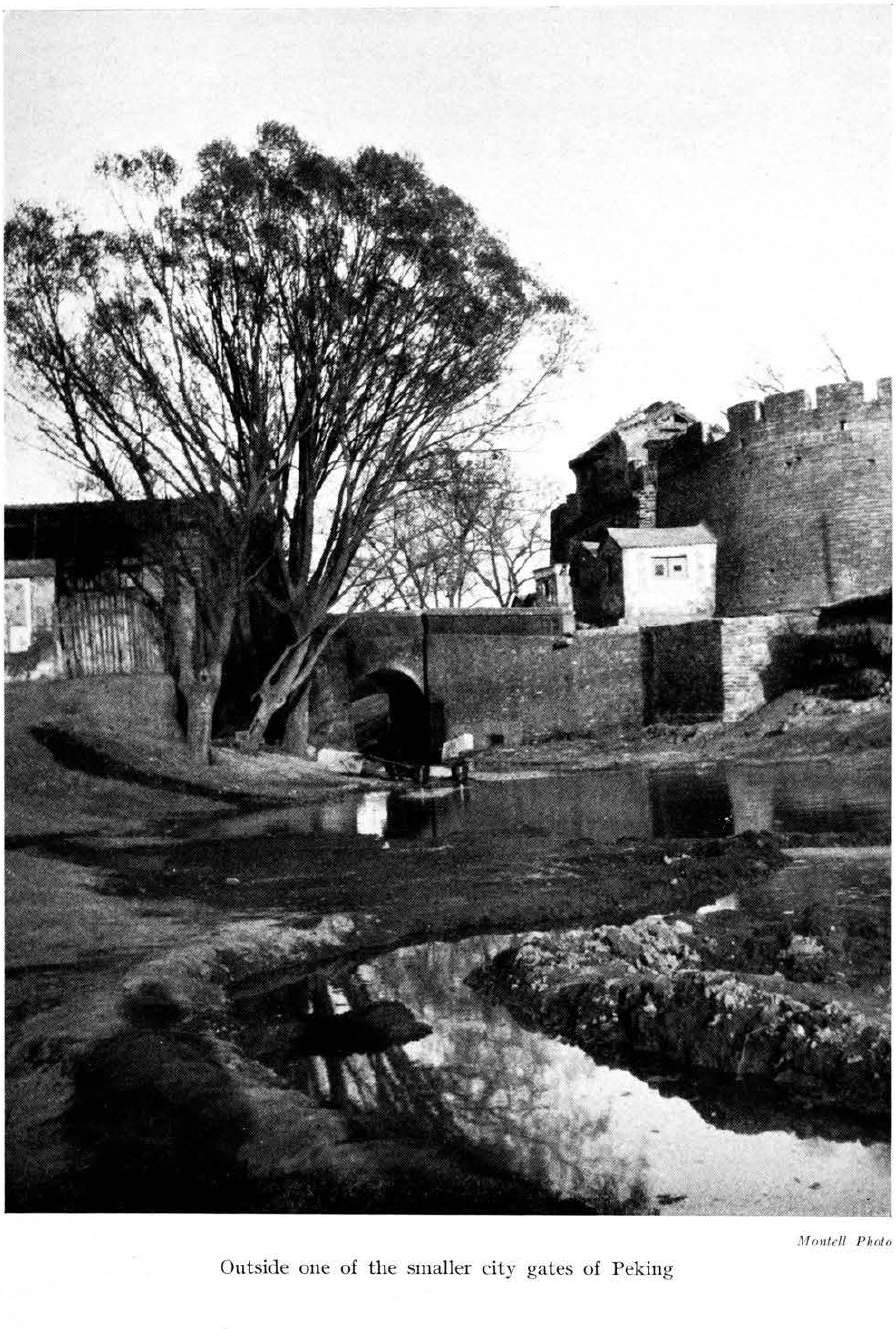
The whole of this privately initiated opposition came from university circles and learned institutions in Peking. Some of these were The National University of Peking, The Tsing-hua University, The Historical Museum, The Central Observatory, The Peking Library, The Art Museum and other institutions — altogether about a dozen. Two bodies of opinion had emerged at the meeting, one representing the extremists, who wished to forbid everything and force the expedition to go home, the other, to which Professors LI CHI and P. L. YUAN lent their voices, being more moderate. When the last-mentioned group stated that a contract between the expedition and Dr WONG WEN-HAO had already been signed, the extremists vented a stream of anything but benevolent criticism against both Dr WONG and myself.

Thus began the duel between West and East — a conflict that provided a succession of dramatic scenes for the next two months. Our position seemed indeed hopeless from the outset, and the majority of our friends saw no gleam of light in the compact darkness. Here I stood, then, in the Chinese capital, with this great expedition that was my own creation — a German-Swedish enterprise with fifteen European members and a very expensive equipment, with provisions for a year and a half, weapons, tents, heavy coats, sleeping-bags and the main part of the final outfit already purchased; in a word, with everything ready and on the point of setting out for the interior — and now, like a bolt from the blue, this totally unexpected and crushing blow, thwarting all our plans! And the drama was not simplified by the fact that these scenes and events were played out against the background of the political upheavals and the sweeping movement for reform led by the forceful General CHIANG KAI-SHEK.



Montell Photo

Chi-nien-tien, a part of The Temple of Heaven, Peking



Montell Photo

Outside one of the smaller city gates of Peking

The thought of capitulating, of renouncing the whole enterprise, disbanding the European members and going home myself was unbearable, I refused to consider it for a moment. The whole of the scientific world knew that we were about to set out. Both Chinese and English, French and German newspapers had paid much attention to our enterprise. In Germany and Sweden and perhaps also in other countries something was expected of us. In certain legations we were still regarded with suspicion — and now, to the delight of such observers and the Chinese academic world, all our plans were to be wrecked.

No, this thought was abhorrent to me. I resolved to fight against the Chinese intolerance to the utmost, and not to yield until absolutely insurmountable obstacles were raised in my path. My honour and my reputation were at stake, and I could not go home, condemned for the rest of my life to suffer the memory of such a crushing defeat. The conflict should be fought to the end. Nevertheless, caution dictated a wire to LARSON, with instructions to postpone the purchase of the camels until further orders.

The following weeks were a time full of excitement. We discussed the situation the whole day and far into the night. If our freedom of movement was to be paralyzed in Peking we would try to enter China either with Russian permission via Verkhne Udinsk to Ulan Bator Khoto (Urga) or via Novo Sibirsk and Semipalatinsk to Urumchi.

MALICIOUS RUMOURS

On March 7th I received a visit of our friend Mr YUNG of the Foreign Office, who had talked over the changed situation with WELLINGTON KOO. Dr KOO, however, had taken the matter calmly. He had advised me to try to get into touch with the opposition and to publish my contract with Dr WONG WENHAO in the Chinese press. The most fantastically garbled accounts of our plans had already appeared in the newspapers of the opposition. It was claimed that we had come to China with a number of aeroplanes, in which without any possibility of control we intended to take away large quantities of valuable archaeological finds; it was up to the Foreign Office to prohibit all such traffic. I preferred, however, not to have anything to do with the speculations of the Chinese press. The most wildly impossible rumours were launched from the very outset. If we defied the resistance of the opposition and dared to take the expedition and its formidable equipment by rail to Pao-t'ou, crowds of students would attack us, pour oil on our luggage-vans and destroy everything. We should be prepared for obstruction with violence. In the meantime our opponents contented themselves with collecting signatures for a giant petition that was to be submitted to the Government, demanding that the expedition be absolutely prohibited. I was shown this document while on a visit to Dr TING and Dr WONG. It had been signed by 12 learned societies, universities and institutions, and was to the effect that a European enterprise, aiming to take out of China archaeological and other objects of inestimable value, must be nipped in the bud. The petition had been sent to WONG, with a demand for his signature. For two reasons Dr WONG was the object of the opposition's envy and ill-will: first, because he had negotiated with ANDERSSON and myself, without consulting other scientific institutions, and second, because The Geological Survey of China was generally considered to be the best organized scientific institution in Peking, and directed according to the most modern European principles. The initiative for the action against us was laid at the door of the two university professors SHEN CHIEN-SSU and MA HENG, both archaeologists. On the advice of Dr TING I wrote to the first mentioned of the two, suggesting a meeting at which the fate of my expedition might be discussed. I wrote this letter at TING's dictation. It was diplomatically and politely worded. TING knew how to handle his countrymen, and I relied blindly on his judgment. To try to force one's way with an uncompromising tone does not pay in China. One simply gets nowhere, and only irritates one's opponents to intensified resistance. During the whole campaign I used soft and conciliatory words, and found that this method was in the long run the only possible course.

We were, however, forestalled, for the following day we received an invitation to a meeting from the opposition, and our letter was accordingly not sent. This seemed to indicate a gleam of hope. But in the press the expedition had still to run the gauntlet. The volubility of the tavern politicians rose into crescendo, but I remained silent. The staffs of the legations and other Europeans considered the position hopeless and regarded me as a beaten hero.

I had a constant stream of visitors. Mr YUNG came with new greetings from WELLINGTON KOO and WANG YIN-T'AI and assured me that I could rely on their support. I was told that it was not so much a matter of a scientific opposition to my expedition as of a student action directed against the Government. YUNG dropped one or two hints about the reigning confusion in the different branches of the administration, and asked what one could expect of officials who had not drawn their salaries for a year or more. He therefore considered it hopeless to wait for the promised licenses for bearing arms. To my request for duty exemption for our equipment, on the other hand, I received a reply from the Minister for Finance in an uncommonly short time. This was to the effect that as ROY CHAPMAN ANDREWS had always had to pay customs fees, I must also be prepared to do the same. The fees were said to comprise 2½ per cent of the value of the goods. He asked for specific lists of the contents of our packing cases.

On March 10th the first meeting took place in one of the rooms of the university, where a dozen representatives of the various hostile institutions were seated at a long table. Professor ANDERSSON, who after 13 years' service in The Geological Survey of China was familiar with the etiquette in the academic world and the tactics that should be adopted in such a delicate situation, had suggested that on our arrival at the meeting I should remain only a short time, invite those present to a banquet at my hotel, and then rise and go. This was to remind my opponents that it was far beneath my dignity to accept the conditions they might be pleased to set up for the future activity of the expedition in the position, so to speak, of prisoner at the bar. That it was their intention to allow the expedition to set out, even if in a very modified form and under their control, was obvious — they would otherwise never have invited me to the meeting. The Government had already sanctioned the preliminary expedition, and only the Government had thus the power to veto it, in which case all discussion would of course have been superfluous.

Our entrance was the signal for all to rise and make polite greeting, whereupon each in turn was introduced to me. Professor ANDERSSON had known them previously. I conversed especially with SIU PING-CH'ANG, professor of history, and LIU FU, professor of musical acoustics, both of the National University of Peking. These two gentlemen spoke French, after many years' study at Sorbonne. Before the negotiations began I expressed the hope that I might see them as my guests at a banquet at my hotel, an invitation that was accepted with great affability. I then rose, made my bow, and left. Professor ANDERSSON was kind enough to remain behind to take upon himself the thankless and trying task of carrying on the battle on my behalf.

In the course of the subsequent discussion ANDERSSON reminded those present that a contract already existed between Dr WONG and myself. They were, however, unwilling to approve of this contract, and desired to draw up a new one themselves. The main points were indicated then and there, namely, that no collections should be taken out of China and that a central committee should be appointed, with the function of controlling everything touching not only my own but also all future European and American expeditions. ANDERSSON suggested that two Chinese archaeologists should accompany us and carry out excavations, a proposal that could not fail to fall in good soil.

The newspapers had evidently found out that something was in the air, for I was battened upon by several pressmen. »The Peking Leader» had an editorial in which it was complained that I had received a permit to travel, while ANDREWS had been stopped. I had nothing to conceal and nothing to reveal, and I advised the newspaper-men to apply to the professors at the university.

It was considered an advantage for us that we had been attacked by Red elements, in so far as the worst enemy of the Reds was CHANG TSO-LIN. The vice-minister for Foreign Affairs took matters calmly when Baron LEIJONHUFVUD and I visited him. »Pay no attention to the attack of the opposition,» he said. »You have already got permission to set out, and besides the Government there is no authority that can stop you. Passports, arms-licenses, exemption from duty, railway-carriages — you shall have everything without needing to wait.» Everything seemed so simple when one spoke with those in power; it was only the learned world, our colleagues, scientists like ourselves, who tried to put obstacles in our way. This *odium theologicum*, that is so common in Europe, was after all no less rife in China. Sinister powers seemed to be at work behind the scenes. WANG YIN-T'AI's promises were certainly all too optimistic.

On March 12th we paid another visit to Dr V. K. TING, who was himself a nationalist, though of a more generous kind; he was not of those whose patriotic fervour blinds them to the importance and significance of international co-operation. TING consoled us by pointing out that the opposition was directed really not so much against myself and the expedition as against himself, WONG, ANDERSSON and The Geological Survey of China.

Meantime, Professor GRABAU wrote a brilliant article in reply to the editorial in »The Peking Leader», in which in a calm and dispassionate way he put the whole of our case in a right perspective. He showed that it could only be to the advantage of the Chinese if trained European scientists and explorers helped them to find and preserve the inexhaustible wealth of scientific treasure that lay hidden in their native soil. Especially the students had felt it to be insulting to China that I had spoken of an »expedition» in their country. »Expeditions», they opined, were carried out only among blacks and savages, not in a country with such an ancient culture as China. GRABAU now pointed out that expeditions are launched every year in America, Sweden and most other civilized countries, and that the term was therefore not in any way derogatory to China. But the opposition was at this stage so uncontrollably thin-skinned that even this courteously worded and moderate article was considered dangerous, and it was never printed.

The simplest matters become difficult and complicated where organization and discipline are lacking. It is always the struggle for power between individuals and parties that dislocates the normal order. According to Dr V. K. TING, Kuomintang would be in power in Peking within six months. We had therefore to direct our attention to two quarters, CHANG TSO-LIN and CHIANG KAI-SHEK. It was like standing and marking time in a swamp, one foot sinking all the deeper while one lifted the other. As far as possible we took matters into our own hands and went on quietly with our preparations where we could do so without the control of the authorities. The first careless step on our part might irritate the students and precipitate mob-action.

On March 14th our position was approximately as follows: From Tientsin came a report from ZIMMERMANN to the effect that the customs authorities insisted on opening all of our 500 packing-cases, which were bound with iron hoops. YUNG, our friend from Wai-chiao-pu, told us that WANG YIN-T'AI had received a written protest from the opposition, demanding that the expedition be prohibited. He had replied in calm and conciliatory terms. YUNG advised us to pay no attention to any other authority than the Government itself, which had promised us passports and was entirely on our side. The Chinese press adopted quite another tone. No foreigners at all were to be tolerated in China. All of them should be hunted out of the country. The Chinese themselves could explore their mountains and deserts and their ancient sites; they needed no help from without. The expedition became increasingly a *cause célèbre*, and came in for a share of publicity that was anything but welcome after the strict silence we had hitherto managed to observe.

From Professor SHEN, the real ring-leader of the opposition, and from the newly established society »The Union of the Scientific Corporations of Peking» I received a letter of reply that was polite enough as to form but contained no positive contribution to the matter in hand. He was about to leave for an archaeological congress in Tokyo and suggested that I should carry on negotiations in the meantime with Professor LIU FU.

The Government kept its word in the matter of the vans and a carriage. The Traffic Manager of the Sui-yüan Railway informed me that two vans with a capacity of 40 and 30 tons respectively had been loaded in Tientsin and taken up to Feng-t'ai for our account. A second-class carriage had been reserved at Hsi-chih-men station in the north-western corner of Peking. The charge for the hire of trucks and carriage together amounted to 3812 Mexican dollars, not counting *likin* or the inland duty in Tientsin.

THE OPPOSITION CONTINUES

The great banquet of conciliation that was to have been given by me on March 14th shrank into a complete fiasco. On the morning of that day I received polite regrets from every one of the seventeen members of the opposition whom I had invited. Some pleaded previous engagements, others referred to sickness or journeys. Only two Chinese, not members of the opposition, turned up.

There were no signs of a more conciliatory attitude on the part of the opposition. It was suggested that the only thing that might induce them to adopt a less uncompromising tone would be the exclusion of palaeontology and archaeology from my program and the dismissal of NORIN and BERGMAN. Such a course was naturally out of the question. It almost seemed that the game was up.

I had thought of sending the whole staff of the expedition with baggage and equipment to Pao-t'ou on March 19th, as we had our own house there, and this, with the much lower cost of living, would have reduced our expenses very considerably. A couple of days before this date, however, I received the following communication from Mr YUNG: »WANG YIN-T'AI advises you to wait until things are cleared up with the opposition. Otherwise you risk being forced to return from Pao-t'ou to Peking with the whole expedition». Furthermore, a meeting of the opposition had been convened for March 19th, and they had declared that before this date they must have a newly written report of our desires and plans. It looked as if we could no longer count on the support of the Government. It was really scarcely surprising that the latter body should think of its own welfare in the first place. Even within its own ranks the Government had members who were whole-heartedly on the side of Kuomintang. When now the university circles and the learned institutions, which unreservedly embraced the cause of Kuomintang, attacked the Government on account of the support it had given us, it would have been too much to expect the Government to jeopardize its already sufficiently precarious position for our sakes.

When NORIN heard that the fate of the expedition might depend upon his dismissal, he immediately stated his willingness to resign. I replied that if his resignation proved necessary I would at my own expense put him in a position to carry out a special expedition in the Transhimalayas, whose geological and geographical exploration lay so close to my heart. BERGMAN, too, was perfectly prepared to spring overboard to save the common ship. Dr HUMMEL, our physician, was the only one who was tolerated, as there was no danger of his encroaching upon the inexhaustible archaeological and palaeontological resources of this vast country. But HUMMEL had for some weeks been a patient at the Peking Union Medical College, struck down by a serious infectious disease; he was himself afraid that he would be compelled to return home. Was I then to lose the whole Swedish scientific staff? The self-sacrifice and faithfulness shown me during this time by the Swedish members was magnificent. We could sit up until 4 o'clock in the morning discussing new plans and measures. None of us was willing to give up. In one way or another we would save our honour; and we were determined that science should benefit from our work in some form or other. Finally we parted, to sleep for a few hours after a trying day and to wake up to another — still worse.

The morrow brought the information that the journey to Pao-t'ou, including customs duties, would amount to 7,000 Mexican dollars! For this sum one might carry out a whole little expedition to the heart of Asia!

From Wai-chiao-pu I received another message with the old advice: »Wait!» I replied that the carriage and trucks had been ordered for a certain day and that I should lose them if I let them stand unused. For answer I received the smiling reply: »Wait!» Our life in Peking cost us 225 Mexican dollars a day. We were afraid of being thrown overboard by this Government, which sought popularity with the nationalistic mob, with its hoarse yell: »Crucify! Crucify!»

I had another communication from Mr Yung to the effect that the native customs in Tientsin were insistant in their demand to be allowed to open our packing-cases. It was as if we were held back by a thousand small paws, armed with the sharpest of claws. If the claws were withdrawn in one place they immediately flashed out in another. I longed to get away from this hornet's nest — to be coping instead with clean winds, sandstorms and wide desert spaces. My opponents seemed to be bent on killing me with pin-pricks, slowly and cruelly. I had not the stomach to read all the base articles that were written in »The North China Standard» and the rest of the Chinese press. The newspaper mentioned printed an article with the heading »Andrews too», in which the writer tried to make out that Andrews was just as dangerous for Chinese research as I. The nationalistic scientists were implacable. Some went so far as to assert that it was quite indifferent what the Europeans aimed at, they were in any case noxious and must be driven out of the country. Others were more conciliatory and suggested that one might at least listen to my offers and proposals. The feeling that Chinese science had not yet reached the same high level as European science only made them more sensitive and thin-skinned. In reality, Chinese research was *unable*, either scientifically or practically, to organize a completely modern expedition. Moreover, in a country where officials had to wait for months or even longer periods for their salaries, such expeditions simply could not be financed. As has already been mentioned, The Geological Survey of China was a shining exception among the scientific institutions. If the nationalists should succeed in crippling Andrews and myself they would be serving neither the cause of international scientific research nor that of their own country. But their one thought was to thwart us, the loss of our research work and its results was of no importance.

Within Government circles there was evidence of a certain uneasiness lest, in spite of everything, we should take matters into our own hands and simply walk out of this invisible prison in which we chafed so intolerably. Mr Yung paid us another visit with prayers from Wang Yin-t'ai that we should wait until the storm had blown over; and Wellington Koo sent the same request to me through Sweden's *chargé d'affaires*. It would be cheaper for us to stay in Peking than to be forced, after a »flight» to Pao-t'ou, to return in any case. Warnings to this effect were also brought to me from Wu Chin, the marshal's vice-minister for Foreign Affairs. The marshal was apparently afraid of the opposition, and his Government in North China was so weak that it was forced to pay attention to a scientific clique. I wrote to Wu Chin to tell him that on March 22nd I intended to send the whole expedition to Pao-t'ou, and asked him to communicate this resolve of mine to Wellington Koo and Wang Yin-t'ai.

Some of the diplomats with whom I had discussed our situation had tried to persuade me that I should not pay the slightest attention to the demands and the intolerance of the opposition, that I should rather harden and take a strong initiative against those who sought to hinder the expedition and simply set off for the interior in spite of them. This method seemed both manly and attractive, but the sequel proved it to be false. When, about this time, I met the French Minister, Comte DE MARTEL, he expressed his admiration for my patience. In his opinion, patience and forbearance were the only weapons with which one could make any headway against Chinese opponents.

FIRST DRAFT OF CONTRACT

When Professor ANDERSSON and I had thoroughly discussed the cardinal points in which we considered that the opposition might at least formally be allowed to have their way, ANDERSSON drew up the document they had asked for. It was unreservedly approved by Dr WONG. The essential contents was as follows:

The Scientific Mission into north-western China is organized by the Union of Scientific Corporations of Peking.

The fact of the matter was that the opposition demanded that the expedition be regarded as a purely Chinese initiative, in which a number of Europeans had been granted permission to participate. This was really only a formality, designed to satisfy and calm down the university circles and the nationalistic feelings of the students. For me personally and from the Western point of view it was of course a matter of complete indifference what the Chinese opposition and the press chose to call the expedition. In the history of geographical research it would always find its rightful name; and the Chinese nationalists who wished to shine in front of their own people with borrowed plumes and to appropriate to themselves a merit that by no means belonged to them could only earn a quickly fading glimmer of ridicule.

Furthermore, I was willing to accede to the demand that I should be referred to as co-director of the expedition, and have a Chinese co-director at my side. The enterprise was thus to have two leaders, one foreign and one Chinese — a fundamental mistake, as such an undertaking must be guided by *one* will and at the responsibility of *one* man. However, I acceded to this demand in the calm assurance that the hard and serious business of life in the field would automatically decide which of the two directors was the real leader.

At my preliminary meetings the Chinese had also decided to found an Honorary Board of a few prominent scientists who were to be informed in advance of the schedule for the scientific work during the expedition. In collaboration with the Chinese co-director, this Board was to prepare and deal with all practical questions.

The Chinese insisted that all collections that might be made during the expedition should be taken to Peking and placed at the disposal of the various institutions for treatment and future custody. In the course of the discussions on this point I had set forth as a just and equitable counter-request the proposal that representative duplicate collections of all objects found should be handed over to Sweden by way of thanks for my having procured the means for the expedition, without which it would never have been possible. Furthermore, I required that the Swedish research workers be allowed to investigate and classify their collections themselves.

The letter in which I developed these points began with some words in recognition of nationalism, which is a feature characteristic of most peoples, and ended with the hope that the openness with which I had approached them be met with generosity from their side.

REPLY OF THE OPPOSITION

In their reply, the opposition summoned me to a new meeting on March 19th in the Third Compound of the Peking National University. To this we objected that it would be more suitable if they visited me in Hotel Wagons Lits. Five gentlemen turned up and declared that they had no executive power themselves, but were only representatives of scientific corporations and institutions in Peking. They were: Mr CHOU, formerly for a short period governor in Honan; he was an elderly gentleman with a grey goatee beard, very polite and affable in his manner, but firm and exacting, and cherishing in his heart an implacable hatred of foreigners. At the meetings and afterwards in the Peking Committee he acted as chairman. Professor LIU FU, chairman of the executive committee, was an amiable and friendly disposed man, though he, too, considered Western interference as a danger and a threat to the hegemony of Chinese science in China. He afterwards became the real soul in the Peking Committee and the driving will behind its activities; and it was chiefly to him that in the following years I had to apply to get my desiderata granted. Unfortunately he died in 1934, one year before the conclusion of the expedition, and I deeply regretted his decease. P. L. YUAN, professor at the Tsing-hua University, was an extremely learned and skilful geologist, palaeontologist, archaeologist and topographer who spoke perfect English and had studied for many years in America. He was from the very beginning sympathetically disposed, and he understood the importance of co-operation with Western research for the future of Chinese science. He was the only Chinese with whom we collaborated intimately who had the capacity to organize and lead an expedition of his own in unknown or little known tracts. Professor YUAN had also, in 1923, taken part in ANDERSSON's expedition to Kansu. Dr LI CHI was a skilful and well-schooled archaeologist, and had already acquired a considerable reputation among fellow-scientists in the West; he, too, had been in touch with the modern methods of Western science for sufficiently long to realize the importance of the work we intended to carry out. The fifth member of the delegation which now came to my hotel was a young secretary who took notes of all that was said at this meeting.

The delegation had drawn up a list of all the questions I had to answer. They numbered 14 points — just like WILSON's! The meeting was not unlike a court of justice in which I appeared in the rôle of prisoner at the bar, being subjected to a detailed cross-examination. They wished to orient themselves in the light of my answers and then to draw up the contract they intended to offer me. The points were as follows.

1. Maps, mapping work and astronomical observations. The most important restriction was that no maps were to be drawn on a larger scale than 1: 300.000.

2. Wireless. This was simple, since we had never contemplated taking a wireless transmitter, but only a receiving set with which we could register the time-signals from Nauen, Bordeaux, Cavite etc. for longitude determinations.

3. Meteorological observations and their significance for military purposes. It turned out that grave fears were entertained in connection with a thorough investigation of the climate and prevailing winds of Inner Asia, as a knowledge of these conditions might facilitate, in the event of war, a hostile invasion by air. We had thus to cope not only with their very understandable aversion to the idea of their archaeological and palaeontological treasures being carried off by Europeans, but also with their fear that foreigners might get to know too much about their winds and weather. Meteorology had a special importance for us, apart from the purely scientific point of view, as we still hoped for an opportunity to open an air-route through Asia after the conclusion of the preliminary caravan journey. My attempts to explain away the military importance of meteorology were, however, without effect. But this talk of meteorology as a danger to China was only a pretext, and it died down after a time. My plans also included the establishing of at least four permanent meteorological stations. My offer to present these, with the whole of their instrumental equipment, to the Chinese state after the conclusion of the expedition did not make any noticeable effect on the delegation.

4. Scope and distribution of the geological collections.

5. Scope of archaeological research, including exploration along the route and detail research, excavation and collections. This question was one of the most important, and the Chinese were inflexibly determined that *all* objects that were collected should remain in China. The question afterwards gave rise to endless discussions. Professor ANDERSSON and I argued consistently that a representative collection of duplicates ought to fall to Sweden's lot. Among the Chinese there were some who considered this claim justified — when one spoke with them

Fig. 2. Professor Liu Fu

privately; but at the general meetings they never dared to stand up for an opinion that went against the majority.

6. The fund prepared for the total period, and

7. the fund then at disposal. They asked straight out who it was that met the expenses of the expedition, and if it were true, as they had heard, that a German air-line company was behind the enterprise. I considered the financing of the expedition to be a private matter that did not concern them at all. The main thing was that funds for the execution of our plans actually did exist. As I was the leader of the expedition and as several Swedish scientists were taking part, so that we thus had a purely Swedish scientific program of work, I did not feel called upon to give this preliminary meeting an account of our co-operation with Deutsche Lufthansa. Decisive for me in this connection was the promise I had given, at their urgent request, to the two ministers, WELLINGTON KOO and WANG YIN-T'AI, and especially to the Chief of the General Staff, General YANG YÜ-TING, who had promised to lend me his support, after the preliminary caravan expedition, in carrying out our flying plans on the express condition that nothing was to be mentioned about aeroplanes until after the return to Peking after one or one and a half years. I was thus bound to silence by my relations with the leading men in the Government, and this made my position vis-à-vis the delegation ambiguous. However, the very fact that the question of flying was brought up at the

preliminary meeting proved that the members of the delegation were as well-informed in the matter as the ministers and the Chief of the General Staff, and that these gentlemen had not observed silence with their fellow-countrymen, though they had imposed absolute discretion upon me. I therefore considered myself at liberty, a couple of days after the meeting, to speak freely on the subject with Dr Li Chi, as he had shown the most interest in the flying plans. He replied with a smile that he was already cognizant of my desire to try and obtain a flying permit after the preliminary expedition, and that he was also aware that I had bound myself to silence on the subject.

8. Routes and possibilities for geological and archaeological finds. Here it was a matter of determining the roads we should travel and whether and how long we should stop at different points of geological or archaeological interest. At a later stage this question gave rise to many debates.

9. Staffs, especially the scientific staff, and the distribution of the scientists and other trained assistants. The delegates asked me to make a list of all the members of the expedition, stating their names, nationality, ages, the work they had previously been engaged in, whether they were professional soldiers, whether they had taken part in the war, and if so on what fronts. Everything was noted down with the most careful attention.

10. Transport; routes for the return journey with details of all alternatives. It appeared from the discussion of this point that it was feared that we might cross the Chinese frontier somewhere in the north or north-west, betaking ourselves to outer Mongolian, Russian or British-Indian territory, in order in this way to rob them of the collections. I endeavoured to reassure them by pointing out that I had given my word of honour that I should return to Peking without fail and whatever happened.

11. Any plans of publication and their approval by the proper Chinese authorities. For military reasons the meteorological journal was not to be published without their special permission. For the rest, the whole question of publication was to be settled by a later decision, and it looked as if they intended to deprive us of the right to print anything at all in Europe.

12. Time-limit for the scientific work undertaken by the party. I calculated that this preliminary expedition would take about one and a half years.

13. Any aeroplane flying planned. This question was answered in the negative, as no flying was to take place during the preliminary expedition.

14. Any detail information that was not included in this list.

During the whole of this cross-examination they were extremely polite and affable, and the keenness of their logic and their penetration were astonishing. Finally, they asked for my written replies to the 14 points. Professor Andersson and I therefore drew up a thoroughly worked out list, which was to be submitted at a big general meeting a couple of days later.

In spite of all *tracasseries* and threats, the baggage was transported, on March 21st, to Feng-t'ai outside Peking. The station-master at Feng-t'ai declared that there was nothing to prevent our setting out the following day. The situation grew more and more tense. We had determined to set out for Pao-t'ou with the whole expedition, although the threat of reprisals, if we took this step, still held. I was convinced, however, that their decision to make me and my expedition the scapegoat for European intrusion in China was not irrevocable. So far, no hard words or violence had been used. I treated them as our equals throughout; nor was it my feeling that Western peoples represented a higher cultural level than the Chinese. Friendship and a spirit of tolerance were the only roads that could lead us to our goal.

MAIN BODY OF EXPEDITION LEAVES PEKING

Major v. DEWALL, who was in charge of the German contingent, considered it his duty to follow his troop to Pao-t'ou; but as I needed him by me Major HEMPEL was given charge of the Pao-t'ou group.

This group consisted of BERGMAN, DETTMANN, HAUDE, HEMPEL, HEYDER, v. KAULL, v. MARSCHALL, v. MASSENBACH, MÜHLENWEG, NORIN and WALZ. Their interpreter was Mr HENRY SZE, who spoke German. They were to leave on the 22nd and arrive in Pao-t'ou on the 25th of March. HASLUND, LIEBERENZ and ZIMMERMANN were to join them later on.

Accordingly, on March 22nd, the above-mentioned members left Peking for Pao-t'ou. The train was to have started at 12 o'clock; but the departure was somewhat delayed, as the two vans with our provisions and our equipment, a matter of 40 tons, had not yet come up from Feng-t'ai. I had been warned that angry crowds of students would storm the station, set fire to our baggage and derail our vans and carriage. I was told that the opposition was furious that I had dared this step in spite of the discussions and meetings. And now the departure was to be prevented with violence. But no battle took place and we saw no students. The train did not leave until 8 p. m., after a delay of 8 hours.

CHINESE REACTION

LARSON was instructed to go ahead with the purchase of camels. Excitement grew. Some of our Chinese friends had disappeared — rats leaving a sinking ship. Shanghai had fallen into CHIANG KAI-SHEK's hands, an event that might cause our opponents to forget us for a time! The victorious Kuomintang Party was on its way northwards.

On March 23rd I had a nervous and uncontrolled letter from Professor LIU FU. Both he himself and the whole Union of Scientific Corporations of Peking were astonished to see that I had allowed the expedition to leave, contrary to my promise, and obviously intended shortly to follow on myself. Instead of waiting for the two Chinese archaeologists who according to agreement were to have accompanied us, I had turned my back on all our contracts! Finally, he threatened that if I left, he would see to it that the whole Chinese press rose up in arms against us. I immediately wrote a reassuring letter to LIU FU, telling him that I had no intention of leaving Peking before everything was settled.

Mr YUNG came to warn me that if the opposition became violent, the Government would for its own sake withdraw the travelling permit of January 1st. For the rest, he was persuaded that the Government would not long be able to retain its position. Obviously commissioned by the Government, YUNG asked me if it were my intention to leave in silence for Pao-t'ou, in order suddenly to set off with the whole caravan for the desert. I reassured him with the words: »No, the expedition will not start without me, and I shall not leave Peking until everything is settled with the opposition.»

The whole day I was rung up by people on the telephone who wanted to convince themselves that I was really in Peking. I was kept under surveillance, spied upon and regarded as a highly suspicious individual. The marshal's foreign commissioner, WU CHIN, rang up to hear whether I had left or not. It looked as if both the marshal and the Government were on the side of the opposition. WU CHIN said that the marshal was afraid that a new storm of opposition might be fatal. The Europeans who had advised me to ignore the Chinese entirely had underestimated the seriousness of the situation. Actually, the question was only whether I was to be despatched in Peking or in Pao-t'ou.

Both Dr WONG and Dr TING had recommended that two young Chinese geologists should accompany the expedition. One of them, Dr CHAO, had already published works of merit. He was an exceedingly likable man, and was overjoyed at the prospect of journeying to the interior. As the protégé of Dr WONG, however, Dr CHAO was not approved by the opposition, who took as a pretext for his dismissal the fact that on some occasion or other he had betrayed his intention of leaving the main route of the caravan now and then to make independent excursions of his own.

CHAO did not accompany the expedition. He was given another geological commission — in Yünnan, where in some provincial inn he was attacked and shot by bandits. His death was a real and great loss for geological research in China. His extensive experience as a field geologist would have been of inestimable value for us. The geologist who came in his stead had worked in the field for only a few weeks and was not recommended by the experts.

On March 24th »The Peking Leader» had on its front page a news item stating that »the local scientific organizations had telegraphed to the governor of Sui-yüan, General SHANG CHEN and to the authorities in Sinkiang and Kansu, urging them to block the party on the grounds that it is infringing on China's sovereignty». The same item was also printed in all Chinese newspapers. This was a new move in the campaign against my expedition.

I telephoned to Professor LIU FU. He replied that he would come to see me at dinner-time. I showed him the article in the daily paper and asked him straight out if it were true that the opposition had charged the provincial governors to arrest the expedition. LIU FU assured me that the Union stood neither behind this news item nor any telegrams that might have been sent to the governors. In order to prove the Union's innocence he would insert a categorical denial in the next day's papers. He explained that the opposition comprised not only the Union, but also other societies, and he thought that some of these were responsible for the action in the provinces. I expressed my astonishment that such a base attack could be made in a country with such a venerable culture as China. »You treat me like a criminal, who must be removed with violence,» I said; »and yet you wish to be regarded as a civilized people!»

»No, the position that has arisen is due to the fact that you, who have been in Peking since the end of November, have not attempted to get into touch with the Chinese scientific world.»

To this I replied that together with Professor ANDERSSON I had, immediately after my arrival, visited Dr WONG and Dr TING and with the former drawn up a complete plan both for the actual journey and for the distribution of the collections between China and Sweden. For twelve years I had journeyed among the barbarous peoples of innermost Asia and always been well received by them. But here in Peking, a cultural centre from which this civilized people was officially governed, I was treated as a suspicious individual. What would Western scientific circles think of such methods, and what would be thought of the standpoint of Chinese scientists?

LIU assured me that I had misunderstood their intentions. Their only aim had been to find a formula under which we could co-operate to our mutual advantage.

I: »Since March 6th I have not noticed any attempts to arrive at a friendly understanding.»

LIU FU: »Our meetings are convened precisely for the purpose of finding an issue».

I: »The only thing you have so far aimed at in your meetings has been to slander me and vilify me until people want to arrest me in the provinces. If the union of scholars in Peking continues with these hostile tactics I shall recall the expedition from Pao-t'ou and go home».

Liu Fu: »No, no, you must not go home, we must understand each other and come to an agreement. At the meeting this afternoon I will put forward your point of view».

After this I adopted a more conciliatory tone. I told him that I sympathized with their nationalistic attitude, as in my own country I was just as good a nationalist as they were here. I thought they were quite right in wishing to keep all their archaeological and art treasures in China, and that Europe had committed a series of wrongs against the Chinese people ever since the days of the opium war.

THE CHINESE OFFER

The following day Liu Fu returned, bringing with him the minutes of the previous day's meeting. This protocol consisted of fifteen paragraphs. He read them out to me and I took down their contents.

The expedition was to bear the following title:

»The Scientific Mission to Sinkiang organized by the Union organized by the Chinese Scientific Organizations».

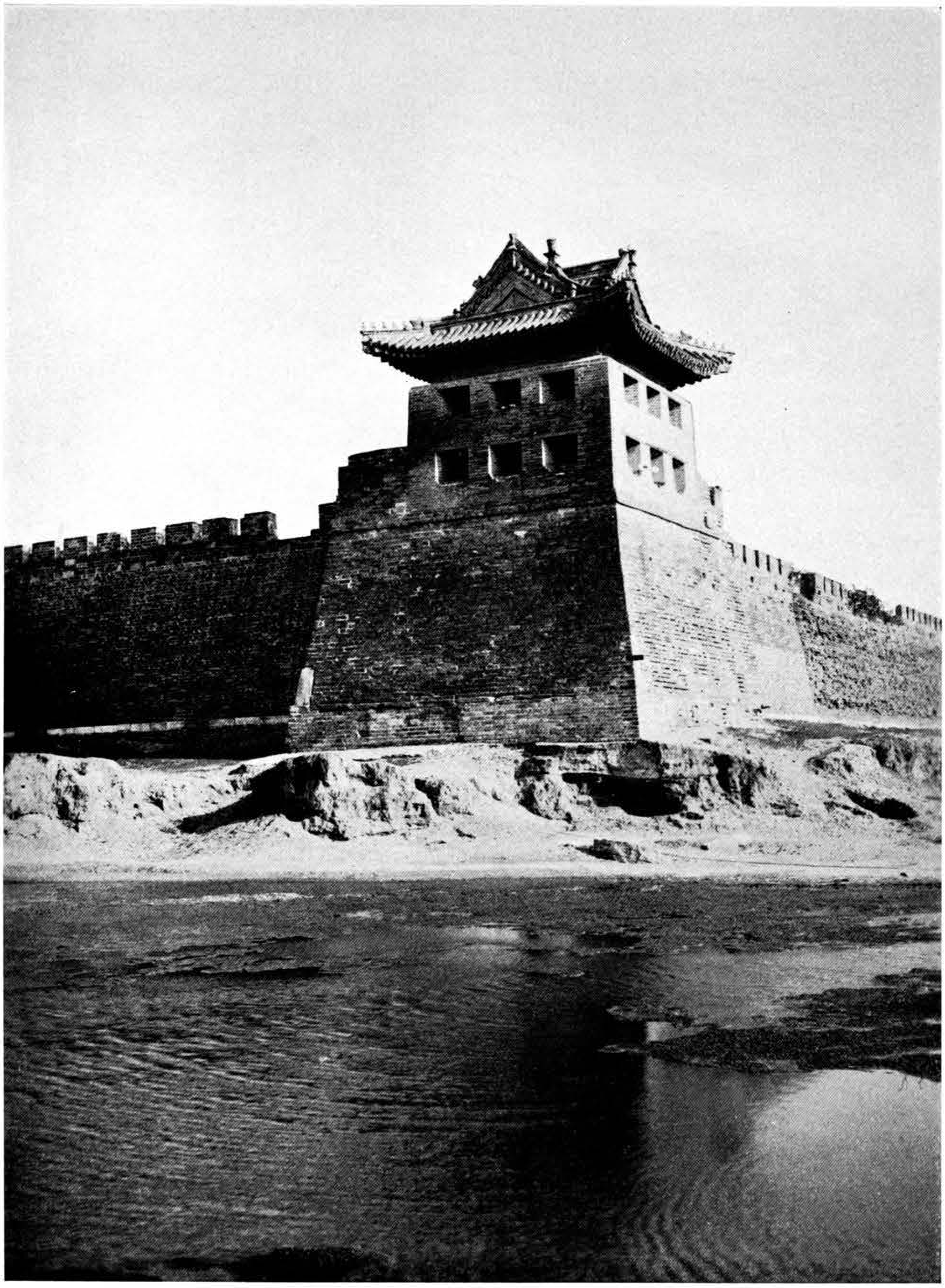
The word »expedition» was disallowed; the enterprise was to be referred to as a mission. It is superfluous to waste words on the expression »organized by»; if it had been replaced by the phrase »disorganized by» it would have been nearer the truth. That the opposition wanted to make out to the Chinese people and those abroad that the expedition was a purely Chinese affair could certainly not redound to the credit of the academic world in Peking.

»The Union will organize an honorary committee, comprising the heads of the interested institutions. The mission will be placed under the permanent control of this committee».

»The mission will add to its staff, as members of the mission, five scientists, representing geology, meteorology, archaeology, astronomy and biology, as well as ten students, who are to be trained as meteorological observers».

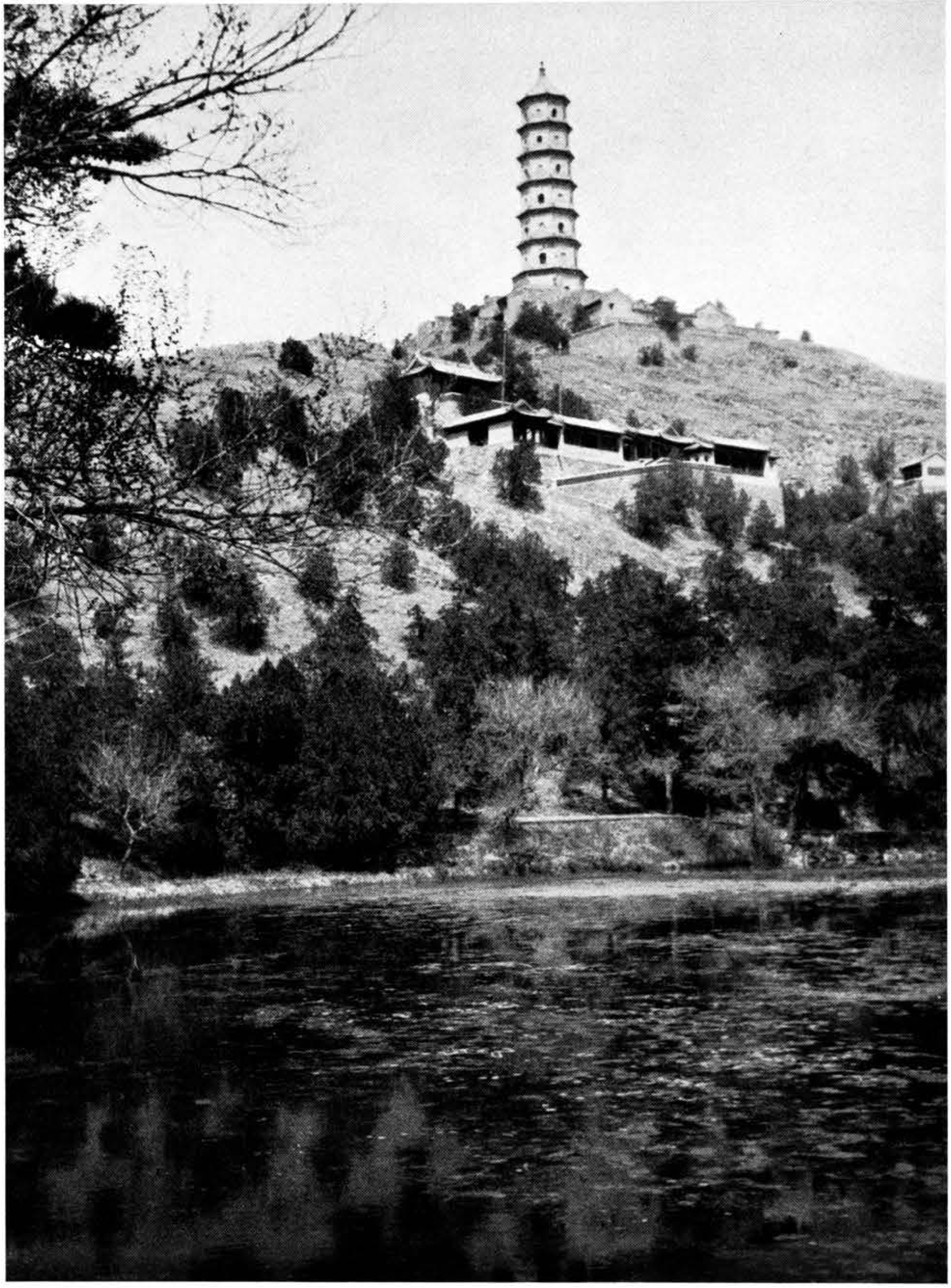
»The leaders of the mission are to be, two directors, one Chinese and the other Swedish. The Chinese is to be one of the five above-mentioned scientists, the Swede is Dr Sven Hedin. *The two directors shall be appointed by the honorary committee. All the members of the mission, both Chinese and foreigners, are to be appointed by the committee. These appointments are to be published in the press. The old passports are to be annulled. In case of negotiations with local authorities all papers, letters and documents are to be signed by the two directors. Both the directors have the same rank and dignity.»*

The clause to the effect that all the members, including Germans and Swedes, were to be appointed by the honorary committee was only a face-saving invention by the Chinese, inserted for the benefit of the newspaper-reading public.



Montell Photo

The north-western corner of the wall of the Chinese City, Peking



Montell Photo

The Jade Fountain in The Western Hills outside Peking

»Collections and scientific observation material, maps and notes, diaries and photographs must be handed in to the committee, and only when the whole material has been inspected and authorized may it be published in the name of the committee, with a sub-title giving the names of the Chinese and foreign authors. If diaries, notes and maps contain anything of a secret character, e. g. military information, the manuscript will be withheld by the committee until the secret is no longer a secret.»

If one remembers that meteorology was reckoned among the military secrets it is easily seen that the door was thus left open for all sorts of arbitrary prohibitions. That detail maps of certain strategically important points must be kept secret, and that foreigners should as a general rule be forbidden to chart such tracts was only natural. But in those parts of the deserts and mountains of innermost Asia where we desired to work there could scarcely be said to be any strategical points; and one can in any case only speak of the strategical importance of such points in a country which possesses troops for the defence of its distant provinces.

»The archaeological collections are to be given into the keeping of the committee in their entirety. After due examination the committee can then decide whether less valuable or indeterminate objects may be handed over to Dr SVEN HEDIN. *The same applies for the palaeontological collections. Other objects, e. g. geological, zoological or botanical, may be so treated that Dr* HEDIN *receives duplicates. All objects that are presented to Sweden should be preserved in a reputable public museum, and it must then be clearly stated that they have been presented by the Union of Scientific Societies.»*

»Permission to carry out excavations in certain tracts where the mission desires to work will be granted on condition that no large monuments, ancient relics or temples are destroyed or damaged.»

»Old and valuable objects of art, such as bronze vases or porcelain, may not be bought by any member for his own account. Coins and less valuable relics may, however, be acquired. The members may not commission merchants or other agents to purchase objects for private accounts. No collections are to be taken out of China without permission. So, for example, nothing may be sent from Sinkiang via the Siberian railway.»

»The route that the committee has laid down for the mission must not be altered in the course of the journey. The time for the duration of the mission is limited to two years, reckoned from the co-directors' start from Peking.»

»The maps made by the mission must not be drawn to a larger scale than 1:300,000.»

»All observations and finds are to be numbered and registered every day by the Chinese members.»

I listened quietly and without protest while Professor LIU FU read out these fifteen points, and noted them down in the form in which I have quoted them above. When he had finished I said coldly: »This is a Peace of Versailles that you want to impose on me».

To this he could not agree. »This is our offer,» he assured me; »and you are perfectly free to make your counter-proposals and to take up whatever points you like for discussion».

I replied: »If you want the Chinese and the foreign members of the mission to be on an equal footing, well and good; but in that case the same equality should extend to the financing of the whole enterprise. I will bear the costs for the foreigners, and you will stand for the expenses of the Chinese».

»So it may seem to you,» answered LIU FU; »as far as I am concerned I am only empowered to communicate to you the decisions made at the meeting of the opposition.»

»The effect of your proposal is to degrade the foreign members to a lower level than the Chinese. Without any economic sacrifices on your side you want to arrogate to the institutions in Peking all the scientific results of our enterprise. However, I will consider your proposals carefully, but you must not be surprised if I wind up the expedition and return home. With the position that I occupy in the western world it must be clear to you that I cannot submit to whatever treatment my opponents may choose to mete out to me.»

We also discussed the question of publication, which in my opinion could not take place in China, and which would, moreover, entail heavier costs than any Chinese Government could grant. LIU FU was convinced that when Kuomintang was once firmly in the saddle it would establish such wonderful order and bring about such prosperity that it would be easily able to grant 400,000 Mexican dollars for the publication of a scientific series.

The question of the Chinese members was also gone into, and I declared that I would with pleasure take as many students as might be necessary for the positions of observer at the meteorological stations.

To my query as to whether the fifteen points represented their last word LIU FU answered »Yes!» But even if I accepted them I still could not leave for Pao-t'ou until the questions of the Chinese members and the passports were settled. When I objected that since receiving a travelling permit from Wai-chiao-pu I had nevertheless been obliged to wait for several weeks for the promised passports, he assured me that this would now be arranged in two weeks — provided that Peking had a government at all by that time, for Dr WELLINGTON KOO's days were numbered. For the rest, it would be sufficient, he said, to have *one* common passport for all the members. I pointed out to him that this would not do, as the expedition would certainly spread out over a wide area, different groups working in different places.

In this way the debate continued for two and a half hours, at the end of which I had a feeling that the Chinese would doubtless be willing to make concessions on a number of points, for it was clear that at bottom they were determined not to lose this opportunity of taking part in such a big and well-equipped expedition at foreign expense.

From LARSON I received a wire saying that the expedition had passed Kuei-hua-ch'eng without any hitches, and that it would arrive in Pao-t'ou within a few hours. This did not tally with a rumour that was then circulating in Peking that the whole party had been arrested as Communists. I made inquiries at CHANG-TSO-LIN's head-quarters, but neither there nor in Wai-chiao-pu had anything been heard about any arrest. It was obvious that there were some hidden and malevolent whisperers who sought to do us mischief by spreading the rumour that the expedition was a blind for German flying plans in collaboration with Soviet Russia.

At the same time came the exciting news of Nanking's fall, in connection with which several Europeans had been killed and wounded.

I was thus indefinitely nailed down in Peking. The days passed slowly, each day heavy with its own tension. What tormented me most was being separated from my companions instead of being allowed to set out. A certain calm prevailed — the calm before the storm. The winds of the new epoch blew more and more strongly from the south; Hankow, Shanghai, Nanking had all fallen — when would the turn come to Peking? It was said that CHANG TSO-LIN was in despair and kotowing to his house gods. American subjects had been ordered to move to the coast. All the unrest that hovered about my expedition should be seen against the background of a great revolutionary political movement. I was sailing in the teeth of a hard head-wind. It was even possible that war might break out in the neighbourhood of Peking, and what effect would such an eventuality have on my expedition? It would be little short of a miracle if we managed to steer our little ship safely past all the hidden rocks and reefs to the open sea of the great desert.

On March 28th I received LIU FU's fifteen points in writing, together with a personal letter in which he thanked me for having provisionally accepted all except seven points, which were to be made the object of further discussion. This document was signed by The Federation of Scientific Institutions of China. Some of the members of the opposition were obviously afraid that I might lose patience and return home.

It would not have been at all surprising if Lufthansa had tired of the whole enterprise when the German Minister in Peking both wrote and wired to Auswärtiges Amt, assuring them that there would be no flying in China in our time. And the introduction of air-traffic was precisely what Lufthansa was aiming at. I was fighting on three fronts, the political revolution that was under way, the opposition, and the risk of Lufthansa's liquidating the whole enterprise. What could I have done? With the expedition in Pao-t'ou and I myself entangled in seemingly hopeless negotiations in Peking! I should have cut such a sorry figure that I could scarcely have shown my face in Europe again. But Lufthansa did not leave me in the lurch, and I shall therefore always feel a deep debt of gratitude towards the German air-line company.

In order to find points of departure and new channels for discussion I wrote a letter to Liu Fu, stating it as my conviction that we should certainly come to an agreement in the essential points and that with a little good will from both sides we could resolve the points at which we were still at variance.

THE PAO-T'OU GROUP

From Major Hempel I received a reassuring letter. All was well in Pao-t'ou. The journey had passed without a hitch. No *likin* had been demanded, and Chang Tso-lin's letter to Marshal Yang in Urumchi, which Hempel had taken as an extra passport, had worked like a charm everywhere. It was understood that a party of Europeans with such a powerful protector must not be molested. All the members were busily repacking, stowing provisions and kit into cases and boxes suitable for camel-transport. A dozen first-class camels had been purchased. Three soldiers had been detailed by the military authorities in Pao-t'ou for guard-duty outside the spacious premises that constituted the head-quarters of the expedition. This guard-duty was also shared by the members of the European staff, who took turn and turn about every night.

A CONVERSATION WITH DR. WONG

On March 30th I was visited by Mr Yung, who came to hear what demands had been made by the opposition. When he heard the chief points he burst out laughing, and seemed not inclined to take them tragically.

I myself called upon Dr Wong Wen-hao, who said that he found all these demands rather moderate.

Wong: Such an agreement is more in the nature of a formality. It will not cause you any trouble. It may even turn out to be useful, if you should happen to run into difficulties in the provinces.

I: I will not have at my side a co-leader of the expedition on a footing of equality with myself, for such an arrangement is in practice impossible to sustain and will only give rise to friction and discord.

Wong: This matter is also a pure formality. If a decent and quiet fellow is chosen for this dignity he won't cause you any trouble, it will in any case be you who will do the deciding. And he may prove very useful in negotiations with the local authorities.

I: I should be sharply criticized, and with justice, if after taking an archaeologist from Sweden and a couple from China I could not take back to Sweden any archaeological collections at all. In that case I would rather drop archaeology altogether and send BERGMAN home.

Wong: Have a friendly and quiet talk with the representatives of the opposition. I am sure you can get them to concede you duplicates. They have already agreed to let you have duplicates in geology.

I: Good. But one point more: I cannot agree to publication taking place in Peking.

Wong: Rest easy, it *can't* take place here. Propose the following condition: if you can publish the results two to three years after the conclusion of the expedition you may do so; otherwise I am to have the right. Say further that everything that is clearly of a purely scientific nature must be free for printing without further control, but that anything that is considered to be of military importance may be investigated by the committee. When it afterwards comes to the point you will find that this clause can be made very elastic.

I: If they press me too hard I shall return home. There may be no limit to my patience, but there certainly is for my dignity.

Wong: Try to reassure them by saying that you accept their fifteen articles provisionally but that you want to discuss a number of details with them or their representatives. This document they have sent you is really only intended to show people how well they have fought for China's interests. But actually the articles are very elastic, and you may accept the proposal without hesitation. You will find that the Chinese in the field are very pleasant and agreeable to have to do with and everything will turn out well. If you think that five Chinese scientists are too many I will drop one of the geologists and only give you CHAO. Another important question concerns the salaries of the Chinese staff. Next time you speak with the opposition begin by fixing the salaries of the Chinese participants. And be generous to them. Then they will be content and dependent on you — and you will have the whip hand of them. Otherwise they will be dissatisfied and self-willed. If you settle the question of salaries in a way that satisfies the Chinese participants, the other issues will be much easier to resolve. I *know* that there are a number of gentlemen who want to accompany you. You will have noticed that the matter of salaries is not touched upon in the fifteen articles. This is because they are ashamed to speak of the question in writing. Clear up this matter with them orally first of all!

I: I have a written reply ready, but I feel it is easier to *speak* of these things than to write about them. The written word is twisted and misunderstood. Now I have let them wait for several days. Yesterday I was visited by Professor SIU PING-CH'ANG. Was he an emissary sent to sound me? Are they afraid that I have lost interest and am revolving new plans?

Wong: Yes, probably. He came to hear your opinion. They are evidently anxious lest they have gone too far with their claims and you don't consider it worth your while to answer. But get into touch with him to-morrow. He is a very influential man. The National University is the centre and the real focus of the opposition against you. And he is one of the most powerful men in the university. Get hold of him and speak with him and LIU.

I: Another matter that is not touched upon in the fifteen articles is the question of a popular travel-book.

Wong: So much the better. Don't bring it up at all. Several such questions can be settled afterwards.

I: Isn't it possible that the committee might be furious if I write such a book without consulting them?

Wong: I don't think so. If you wish you can reserve to yourself the right at this juncture. Have you been in touch with Wai-chiao-pu lately?

I: Yes, through Mr YUNG, who has been kept informed of the position the whole time. He has certainly related everything to WANG YIN-T'AI and Dr KOO.

Wong: I happen to know from the most reliable source that KOO has spoken with the leader of the opposition and asked them to come to an arrangement with you in a quiet and friendly way.

TENSE SITUATION IN PEKING

Mr TSENG, the Chinese Minister in Stockholm, had just returned to Peking, and he was convinced that within six months there would be a new, stabilized régime also in North China and that it would then be easy to get permission to fly. On March 31st the situation was tenser than ever. The German Minister considered things to be so critical that he telegraphed to Berlin, declaring that he could not answer for the safety of the German members of the expedition. The Russian sinologue, IVANOV, was more optimistic. Things would of course look very different in Peking in a year's time. But he did not believe there would be bloodshed; at the worst, demonstrations by the students. FENG YÜ-HSIANG might possibly occupy the town if CHANG TSO-LIN withdrew to Mukden. Merchants brought their curios and other valuables to the Legation Quarter for safety's sake, in case anything should happen. Our expedition was made the subject of the liveliest debates, and the five members who still remained in Peking were followed and spied upon wherever they went. It was thought that in collaboration with Russia we were intriguing against the British hegemony in East Asia.

On the advice of the German Minister, Major v. DEWALL wired to the Minister of Transport in Berlin: »Cannot take sole responsibility for the German staff, especially not for those who are left for indefinite period at inland stations with country seething as at present.» I was therefore perfectly prepared for Lufthansa to recall the German members of the expedition and wind up the whole enterprise. But even this blow was not sufficient to shake Lufthansa's determination. After conferring with Major SCHAUMBURG and Herr WILHELM SCHMIDT, Lufthansa's representatives in China, I sent a telegram to Lufthansa, declaring that we could not share Major v. DEWALL's pessimistic view. Everything was quiet in Peking and we had only to go ahead.

The fate of the expedition had hung by a hair on more than one occasion. Dr V. K. TING told me that WELLINGTON KOO had asked him, some little time before, if he did not think it was time to throw the expedition overboard. TING had replied: »Nothing of the sort! You have given Dr HEDIN permission to travel and you would lose face before the whole world if you did so. Let him know that you would like him to come to terms with the opposition!»

MEETING WITH THE OPPOSITION

On the afternoon of April 2nd we had a meeting with the opposition in one of the rooms of the university. Professor ANDERSSON and I had produced a written reply to the fifteen points. Among those present were CHOU, the former governor, Professor LIU FU, Professor SIU PING-CH'ANG, and professor LI, who occupied the chair of the history of literature.

My suggestion that I should read out my type-written document point by point, debating each point as we came to it, was accepted with acclamation.

The committee in Peking was to be not merely nominal, but should be responsible to the Government and the provincial officials. It was to be a guiding body at the present stage, and later on it would be an established institution, safeguarding the progress of the work.

The question of the respective ranks of the two leaders was a matter that could easily be arranged.

The question of the expedition's finances had been so formulated by us that they were simply *unable* to put any questions or make any comments. They were tactful enough to pass this by in silence.

The Chinese staff, which according to their proposal would consist of fifteen, must be reduced, I told them, to seven. When they heard that I on my side would be content with four stations they tried to stand out for five scientists and eight students, making thirteen altogether.

I: I cannot afford more than seven.

They: We will pay for the six.

I: It will make the caravan too big and unwieldy and expensive; every extra man means three camels.

They: As according to your own proposal the stations are to be taken over by Chinese observers, we cannot leave only one at each station; he would feel too lonely and isolated.

I: I have been lonely and isolated for twelve long years in the interior of Asia, and I was a stranger in your provinces. At the stations situated in towns, Hami, Urumchi and Charchan, there are Chinese enough. For the desert station at Ghashun-nor I will take two observers. And I need, according to what Dr Wong has told me, only *one* geologist, which means that I can do with four scientists and five students, or a total of nine, and this is my maximum. I *can* not take more, for I intend to pay their salaries, $150 a month to each of the scientists and $50 to the students, which amounts to $850 a month or $10,200 a year.

They: We are willing to pay everything in excess of 750 a month.

I: No, I will pay those who accompany the expedition myself. I pay the Europeans and I will treat the Chinese in the same way — there must be no differences in this respect.

They: We can leave this question open and bring it up at the next meeting.

As to publications, a Preliminary Report was to be printed in Peking, the idea being that each science should have one volume; so, for example, the three archaeologists would have one volume in two languages, i. e. 100 pages foreign and 100 pages Chinese. They accepted my proposal concerning the way in which the writing and editing of these volumes should be allotted. The Committee wished to see all manuscripts before publication. Furthermore, they insisted that after the publication of the scientific works all original maps, photographs etc. should be preserved in Peking.

As regards the question of filming, they wanted to know whether it was my intention to make a world-film to be shown in Europe, America and Asia. Yes, such was my intention. They then insisted that they must be allowed to censor it, since it had happened that films taken in China and shown in Europe and America had been of a nature to arouse feelings of contempt or ridicule for the Chinese people. They asked me what I intended to film, and on being told they had nothing to object. But after the actual film had passed their censorship they required that it should be shown for the first time in Peking, and afterwards abroad. To this I agreed with pleasure.

Finally, we came to the important question of an archaeological duplicate collection for Sweden. I drove this point home with a judicious mixture of mildness and diplomatic eloquence: »When I take upon myself the responsibility for the costs of this great expedition, when I make you a present of a system of meteorological stations complete with instruments, when I give your scientists the opportunity of field studies and enrich your museums you ought to be glad to seize the opportunity of showing your gratitude in some way. You are the greatest people on earth, you have the most ancient and the most brilliant history and a splendid future, you rank with the foremost civilized nations and you have a literature that is studied in all countries, your art and architecture is admired all over the world, you are a far-sighted, noble, clever and lovable people — and you are not delighted at the opportunity I give you of showing me this generosity in return for *my* great sacrifices for *you!* If I should *not* carry out this expedition and go home, you would get absolutely nothing. If I do go through with it you will get the complete series of finds, and the only thing I ask is duplicates. Your country and your ancient art and culture will then become better known in Europe; it is an advertisement for China. I attach great importance to this point, for I cannot go home without archaeological finds, I should be laughed at and criticised.

They: The term »duplicate» is very difficult to define. If a grave contains five similar pots, the set cannot be divided even if all the pots are exactly alike.

I: Yes, but if we find two graves, both exactly alike?

They: Well, then you have the one. It is our intention to present you with a representative collection of archaeological objects from the enterprise. But we are bound by a treaty with Japan according to which nothing may be taken out of China or Japan — not even by expeditions that pay all their travelling expenses themselves. You have noticed that in our fifteen articles nothing is mentioned about any such gift to you. The reason is that the Japanese would otherwise have accused us of breaking the treaty.

I: I understand. But if everything else is to be made binding by a written contract I have no guarantee concerning this point, which is of the greatest importance for me. You, can, then, draw up a special secret contract covering this point, and give me an original copy that I may have to fall back on when the expedition is concluded.

They: With pleasure; you shall receive such a written promise.

Finally, I said that I hoped that they would clear up the points concerning the Chinese staff and the matter of the archaeological collections in a satisfactory way. In all the other points we were at variance only as regards details that could be easily arranged and that were not to be allowed to stand between us and our great common goal: the service of science. They pleaded, however, that they were only delegates and that the meeting would decide. When was it to be held? In four days. When would everything be settled, so that I might set off before it became too warm? Liu Fu answered: »In a week.» I asked him to give me his hand on that. He did so, and the others nodded assent. When could the Chinese scientists be ready to start? Three or four days after the decision.

I was to receive a written reply after four days.

The negotiations thus seemed to have taken a favourable course. The American Minister, whom I met shortly afterwards, congratulated me and wondered how my position would affect Roy Chapman Andrews and his expedition.

WARNINGS

The political tension was increasing, although life in Peking was much as usual. The German Minister, Dr Boyé, advised all German subjects to leave for the coast, but left them free to decide the matter for themselves. Ewerlöf, our envoyé, gave similar advice to the Swedish missionaries: »Situation dangerous; Swedish subjects must themselves decide whether they will leave or stay». The German Minister advised me to leave it to the discretion of the German members in the expedition whether they would leave China or stay behind. I considered it to be my duty to follow this advice, as no-one knew what might happen, and I was able to wire to Pao-t'ou the more freely as I was convinced that not a single one of the members of the expedition would use the liberty that was offered, but that everyone would unhesitatingly stay behind. To give a definite order to stay would have meant accepting the responsibility for a situation of whose outcome I was completely ignorant. An order to return home was of course out of the question. In my telegram I added only that for my own part I intended to yield to nothing less than absolutely insuperable obstacles.

RAID OF SOVIET EMBASSY PREMISES

On April 6th an unheard-of event took place. Marshal Chang Tso-lin gave orders for the police and the military to make a raid and occupy the offices of the Dalbank, the Chinese Eastern Railway, the offices of the Soviet Military Attaché and other buildings inside the premises of the Soviet Embassy, and to confiscate their archives and weapons and arrest a number of Communists, both Russian and Chinese.

As afterwards became known, a great deal of propaganda material was found, and a number of documents from the office of the Military Attaché proved beyond all question the complicity of the Soviet Government in the anti-foreign agitation and its continuous interference in China's civil wars.

NEWS FROM PAO-T'OU HEADQUARTERS

On April 8th NORIN arrived in Peking. Everything in Pao-t'ou was quiet; the military authorities were aloof, the civil authorities obliging and polite. FENG YÜ-HSIANG was said to have troops at Wu-yüan, to the west of Pao-t'ou. It was expected that a front line would be drawn over Ta-t'ung; I was still in danger of being cut off from the expedition, which might have entailed the most undesirable complications.

Also LARSON visited me to ask if he might not move the head-quarters northwards from Pao-t'ou to Inner Mongolia, where the camels were to be purchased. I had to adjure him to patience, however, till everything was settled in Peking.

ARRIVAL OF ROY CHAPMAN ANDREWS

ROY CHAPMAN ANDREWS had just returned from America to Peking. He lived in the delightful house that had once been the palace of a Manchu prince and afterwards the residence of Mr MORRISON, the famous »*Times*» correspondent. ANDREWS and I were no strangers to each other — we knew each other through the travel-books we had published. From now on we became close friends. Speaking of the obstacles that had been put in our way by the Chinese nationalists, ANDREWS remarked: »I'm afraid it is I who have spoiled your prospects.» I assured him that if one of us had complicated things for the other it was certainly myself. But in reality we were in the same boat, for the agitation against foreigners hit us both equally hard and would undoubtedly meet all travellers from the West for some time to come.

ANDREWS offered to sell me sixty-five of his camels, that were grazing at Tabun-ul (Tabu-ol) north of Kalgan. He did not need them himself, as he had decided to lie low for the time and not undertake any new campaign that year. He thus did me a great and valuable service, firstly because the camel question was one of our most urgent problems, and secondly by diminishing the amount of silver that I would have to take to Mongolia.

NEW RUMOURS

The following day we were told that from some obscure, unknown source it had come to the ears of General YANG YÜ-TING, the marshal's chief-of-staff, that there were Bolsheviks among my party and that the expedition was in reality something other than it pretended to be. The general had instructed WANG YIN-T'AI to investigate the matter, afterwards explaining that if the Swedish

Minister would guarantee that there were no Bolsheviks among us the accusation would lose all force. General YANG nevertheless required detailed particulars concerning all the German members of the expedition.

FURTHER CONFERENCES WITH THE CHINESE

In Peking things seemed to be brightening somewhat. I received a polite note from the opposition, couched in the friendliest terms, in which they declared that they would be content if I took ten Chinese scientists and students with me. Professors LIU FU and SIU PING-CH'ANG sent me clippings from »Huang Pao» (The Yellow Newspaper) and »Yin Shih Pao» (The Newspaper for Social Problems), where in kindly written articles it was explained that the expedition might be useful to the Sinkiang authorities and that its aims were just and loyal. Here was a splendid piece of evidence of the importance of intimate collaboration with the Chinese.

On a visit to Professor SIU PING-CH'ANG I reminded him of the promise that had been made me at the meeting of April 2nd concerning a written guarantee that duplicate sets of our finds should be reserved for Sweden. He explained that this had been found impossible, but that I could rely upon the opposition's word of honour in the matter.

Dr WONG WEN-HAO told me that SIU PING-CH'ANG would probably be my co-director, as he was the dean of the university. He would be one of the four Chinese scientists. This choice was rather curious, for he was professor of history and philosophy, two subjects which had little enough to do with a scientific expedition like ours. Dr WONG advised me to sign the contract that would be submitted for my approval without hesitation, for any remaining points of difference could be resolved as they came up in the course of the journey.

RESIGNATION OF MAJOR DEWALL

On April 10th Major v. DEWALL, who suffered from diabetes, asked to be allowed to resign. Unlike the rest of us, he had been unable to take out a life insurance, and as he had a family he was unwilling to expose himself to the risks of a long journey. I was deeply sorry to lose the services of this very capable and distinguished man.

REPORT FROM PAO-T'OU

The same day I received from Major HEMPEL a report saying that the Chief of Police in Pao-t'ou had informed him that he had a telegram from the Federation to the effect that our expedition stood under official Chinese protection.

This had reassured the authorities in Pao-t'ou and strengthened the position there of the expedition. At the same time came the news that FENG YÜ-HSIANG'S troops had moved further to the west.

RUSSIAN ANXIETY

From the Swedish Minister in Berlin, AF WIRSÉN, I heard that the Russian ambassador, KRESTINSKI, had expressed to him certain misgivings regarding the expedition, which he considered was altogether too big. Moscow was unable to understand its real intentions. This was but a first sign of that suspicion and ill-will that a few short years afterwards was to render impossible the execution of the German flying plans through Central Asia. Russia had obviously great influence in Sinkiang, which was our first major objective. We saw that we might expect new storm-clouds from this quarter. Never was a peaceful scientific expedition, of such importance from the point of view of international communications, forced to cope with such difficulties.

VISIT TO YANG YÜ-TING

On April 13th envoyé EWERLÖF and I paid a visit to YANG YÜ-TING, the chief of the general staff and a sympathetic, dignified and fine personality. Without any beating about the bush he said straight out: »It has been said that you are Bolsheviks or at least in alliance with the Bolsheviks. Marshal CHANG TSO-LIN and I have not credited this, especially as the Crown Prince of Sweden gave your expedition his strong support. I would now ask you to give your own account of the matter.» Envoyé EWERLÖF related his negotiations with WELLINGTON KOO and WANG YIN-T'AI, and I gave a detailed description of the origin, development and aims of the expedition. The general then replied as follows: »Now I am fully informed and the envoyé's guarantee of your staff's integrity is sufficient. For the present we need think only of the preliminary expedition. Everything is clear. You may set out when you like. I will see that everything is done to facilitate your enterprise. When conditions in China have returned to normal we will do our utmost to help you realize the second part of your plan, namely, the flying. You of course understand that in the middle of civil war it is necessary to observe the greatest caution, and we must think above all of the national defence. In normal conditions there can be no obstacles to the realization of this part of your plan. On your return we will have another conversation.»

I told him that as far as we were concerned we had thought only of flying over geographically interesting tracts and that strategical points had not the slightest interest for us. A Chinese officer would be welcome on every one of the aeroplanes, to see that everything went forward according to plan. The audience fell out to our mutual satisfaction.

It is characteristic of the conditions in North China at this time that just this man, who alone had been able to free us from the net of intrigues in which we had struggled through a whole winter's campaign, had not even been mentioned, let alone applied to. He himself spoke with a certain contempt of the Foreign Office, and it is probable that this department considered itself to be more powerful than the chief of the general staff. Of the latter it was said that not only was he Marshal CHANG TSO-LIN's, Mukden's and Manchuria's brain and sinew but he was also one of the very best of China's rising men. If at the outset I had applied to General YANG YÜ-TING, it is possible that he would not have paid any particular attention to me or to my desires. It needed the great outbreak of the opposition on March 6th to make him aware of the fact that something unusual was in the air. In him we now hoped to have found our best support and a real friend.

The day before the visit to the chief of the general staff the latter, together with WANG YIN-T'AI, had seen the German Minister; and the particulars they had then been given explained the favourable change in YANG YÜ-TING's attitude to the German contingent.

REPLY FROM THE OPPOSITION

One might think that the discussion of the expedition and of the points still under debate might have been hastened and finally concluded, but the Federation of Scientific Institutions seemed to have no more important business than to drag out the negotiations and to ride upon questions of principle that had very little real significance. On April 15th Professor LIU FU brought me the following letter:

Dear Dr HEDIN,

Your letter dated April 11th has been discussed by our Federation this afternoon.

The notes I and III can be more thoroughly considered when the board of Committee and the scientific staff are organized.

In answer to your note II we beg to set forth our fundamental principle No. 2 translated as follows: Collected materials shall be preserved within Chinese territory. Nothing can be transported outside of the country without being examined and sanctioned by the Board of Committee».

Such vagueness could not bring us any nearer a definitive solution — the letter contained no sign of a settlement. LIU and I talked backwards and forwards, and finally I made the following proposal, which he begged me to set down in writing:

»A la Fédération etc.

Je propose d'avoir comme membres de l'expédition cinq savants chinois savoir pour les sciences suivantes: Géologie, Météorologie, Ethnographie, Ethnologie et quatre étudiants.

Pendant cette Mission on ne doit pas faire des fouilles archéologiques du tout. Si on fait pendant le voyage des découvertes archéologiques elles seront mises à la disposition de la Chine.

Si l'Union désire qu'une autre science à coté des quatre mentionées sera representée dans le nombre des cinq chinois j'accepte avec plaisir leur proposition.»

Liu Fu was now to convene a meeting of the Federation for the 17th to discuss my proposal. He told me that the meeting of April 14th had been attended by twelve members and that three votes had been taken. The first was over the motion: that no antiquities at all should be taken out of China and that no duplicates should be given to me. Two of those present voted that nothing should be given to me, and ten that duplicates could be conceded. The second vote referred to the promise on their word of honour, but not in writing, to let me have duplicates. All twelve voted in favour. The third vote: to give me a written guarantee that I would receive duplicates. Here there was one vote for and eleven against.

In these circumstances I went over to my second alternative: to exchange archaeology for geology in the expedition.

At a meeting that Professor Andersson, Dr Hummel and I had with Dr Wong Wen-hao, Professor Li, the librarian, Yuan Tung-li, also a librarian, and Hsü, the director of the Historical Museum, the four Chinese advised me to accept the second of the votes mentioned above, i. e. the oral assurance concerning duplicates, without a written guarantee.

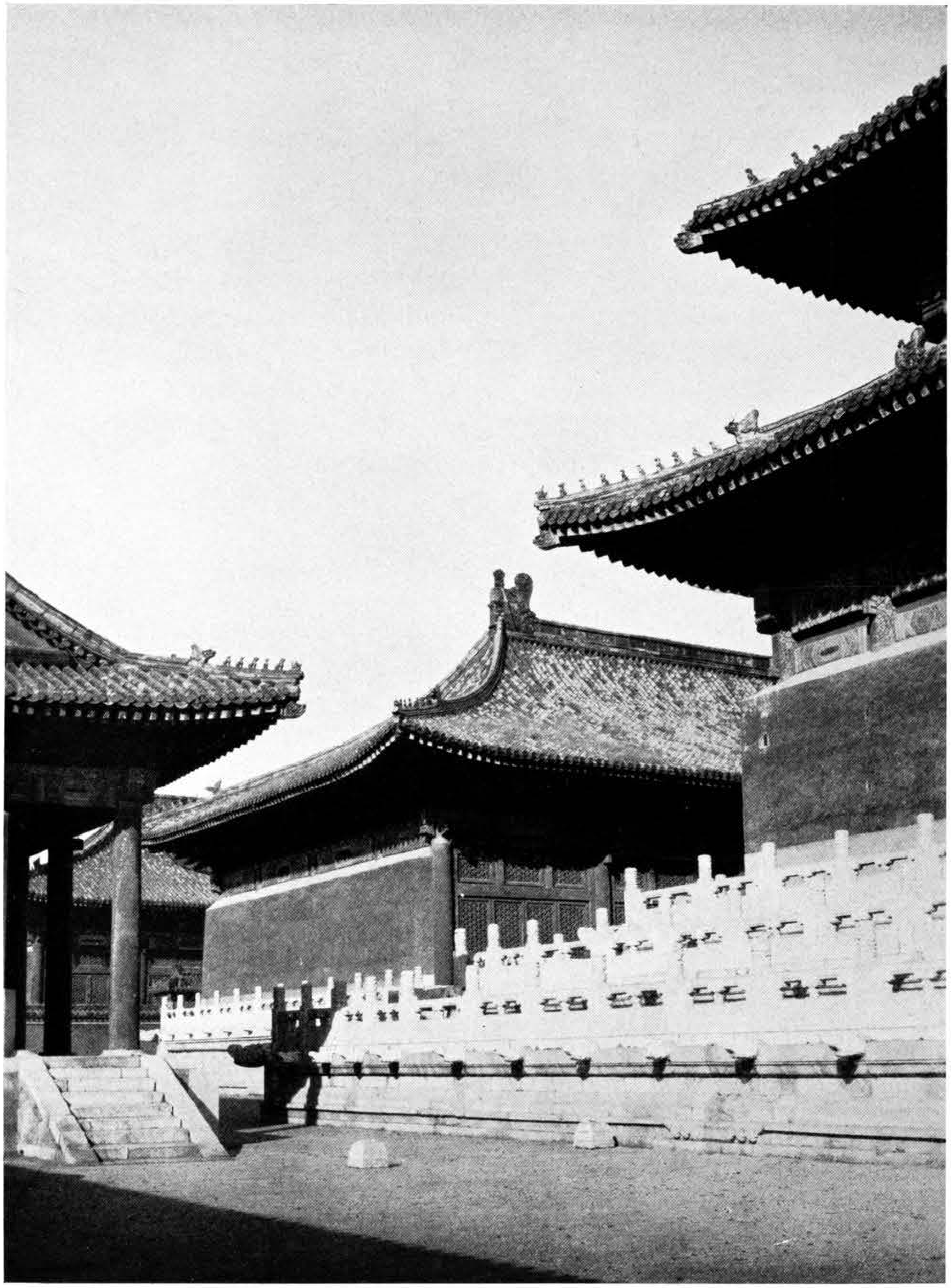
PREPARATION AND DISCUSSIONS OF CONTRACT

On April 16th Professor Liu Fu informed me that five of the Federation's fourteen members accepted my proposal to drop archaeology altogether.

Professor Liu Fu went on to say that the Federation was now occupied in drawing up the contract, which was then to be gone over at a new meeting, translated into English and finally signed by the chairman of the Federation, Governor Chou, and myself. After the signing, twelve further days were considered necessary for the equipment of the Chinese contingent. For the duration of the expedition a special committee in Peking would look after its interests. Professor Liu Fu had been appointed chairman of this committee. Among the other members were noted our reliable friends Yuan Tung-li, the librarian, and Professor Lee, the geologist. The chief of the Chinese contingent in the expedition was to be Professor Siu Ping-ch'ang. From among the large number of students who were enthusiastic at the prospect of accompanying us the four best were to be selected on the basis of examination results. What I was most keyed up about was whether we would be able to leave Peking and Pao-t'ou before the expected political disturbances broke out. The opposition had formally accepted my proposition No. 2, that no archaeological activities should be carried on. In reality, however, two of the Chinese members were archaeologists, and no-one insisted on the dismissal of FOLKE BERGMAN, the Swedish archaeologist, or on the exclusion of the three Chinese excavators CHUANG, PAI and CHIN, who had been trained in archaeological excavation by Professor ANDERSSON. It had also been decided that a selection of duplicates of the archaeological finds should be presented to me »comme souvenir de collaboration». By not giving me a written guarantee regarding the duplicates the Chinese had saved their faces. They were also in a position to point to pecuniary gain. In their own eyes and the eyes of the general public they had won the game. But the decisive tug-o'-war was to take place in the deserts of Central Asia.

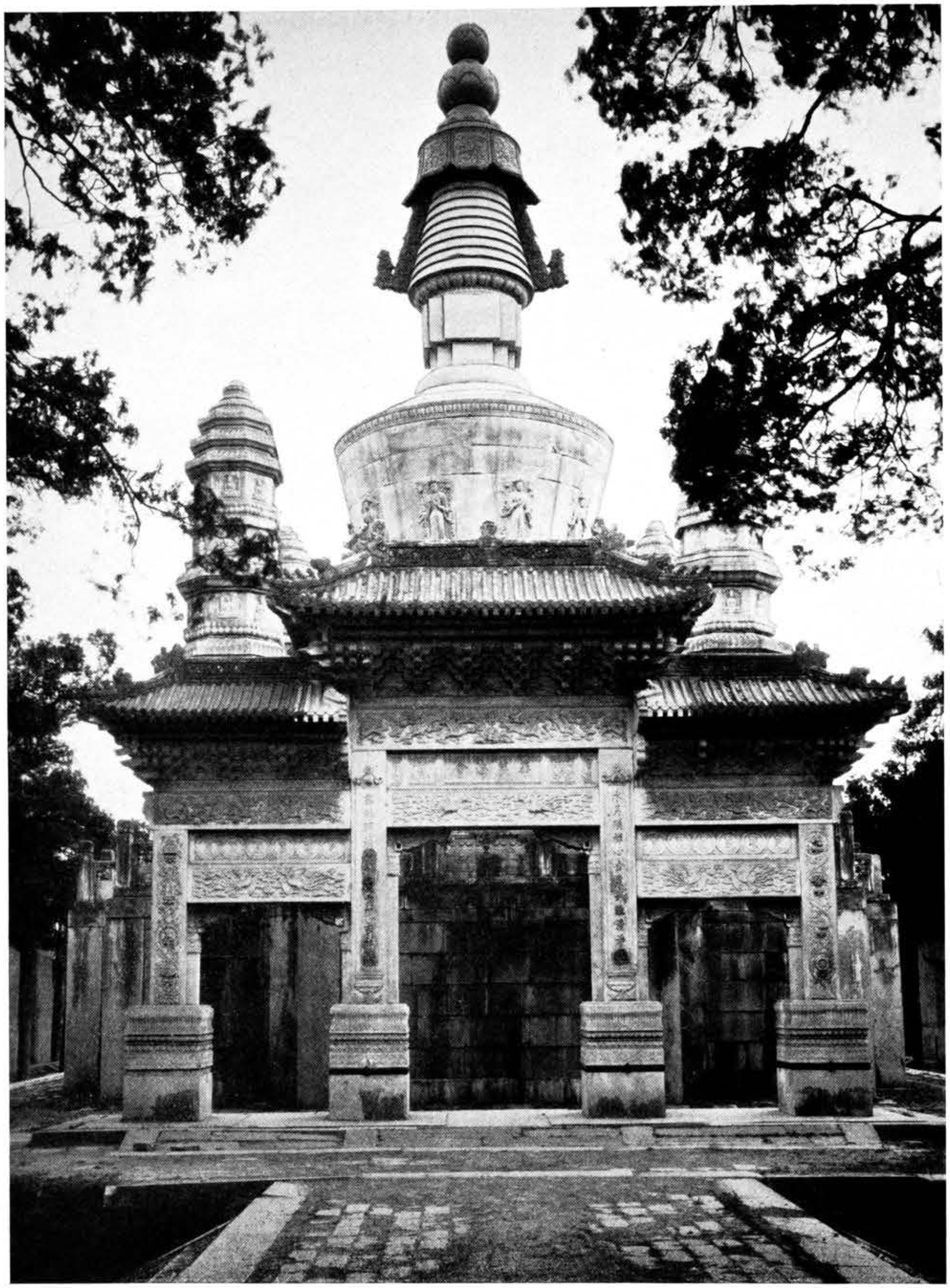
On April 21st I received a visit from the two most prominent Chinese members of the expedition, Professor SIU PING-CH'ANG and Dr P. L. YUAN. They wished to hear some details of my plans concerning the archaeological work in the field. I assured them that this question would not lead to any complications and that it could easily be resolved from case to case. In this connection I expressed my surprise at the strange attitude of the opposition regarding the preservation in China of all objects that were related to archaeology or the history of art. There had been an account in the daily papers of the total disappearance of about eighty precious pieces from the porcelain museum in The Forbidden City. Ancient relics in Peking were allowed to go to ruin and the authorities winked at the thefts of the beautiful yellow tiles from the tomb of the Emperor YUNG LO that were committed every year by tourists; nothing was done to save and preserve these memorials of an older time. In my view it would be better to conserve and protect the city-wall of Peking, the wall around The Forbidden City, and the precious objects in the museums than to squabble about collections that had not yet been made and that were to be fetched from innermost Asia. Dr YUAN replied: »The opposition has protested against the plan to raze the wall around The Forbidden City. You are, moreover, quite right in what you say. If we impose certain conditions on you this is only because all subsequent expeditions, for example ANDREWS's or ANDERSSON's, will refer to you. If we made the conditions for you too easy the others would demand the same privileges. For my own part I would like to be much more generous than the Federation.»

On April 23rd Governor CHOU and Professor LIU FU came with the contract. An important Chinese standpoint was that the expedition should be regarded as a purely Chinese enterprise, and that for the future, when other European explorers came and asked permission to travel in China, the contract I had signed might be



Montell Photo

From the T'ai-miao, the ancestral temple of the Manchu emperors in Peking



Montell Photo

The marble stupa in the grounds of The Yellow Temple, Peking, built by Ch'ien Lung to commemorate the third Tashi Lama used as a precedent. I was the first European to experience the rigorous demands of the new epoch. Those who came after would not find things easier. Actually, as it turned out, I had no successors who travelled under conditions similar to those with which I had to cope.

Liu Fu and I went through the contract point by point. He agreed to several of my suggested alterations and promised to put them forward at a meeting which he had convened for the evening of April 24th, to be attended by the leading men in the Federation. If Liu Fu had been able to decide everything alone it would have been easy to come to an agreement. But when the learned reformers met they seemed incapable of arriving at reasonable conclusions. I have never found such striking proof of the justice of Gustave le Bon's ideas in »Psychologie des foules» or in Goethe's dictum concerning *Die königliche Akademie der Wissenschaften* in Berlin, of whose members he says: »Ein jeder für sich ist ganz leidlich, aber alle zusammen machen einen grossen Dummkopf aus.»

Three of their demands were almost childish. I wanted the clause »The Federation is to organize the mission» changed to »The Federation and Dr Sven Hedin . . . » Their formula »The whole staff is to be appointed by the Federation» I wanted altered to »The European staff is to be appointed by Dr Sven Hedin, the Chinese staff by the Federation.» And finally, I wanted their clause »The Federation appoints Dr Sven Hedin as head of the European section» changed to »*is* the head» etc.

These matters were strictly speaking mere trifles without real importance. Whatever happened, the expedition would always remain my enterprise. The introduction of the Chinese section was a necessary consequence of internal political conditions in China at the time. The main thing was for the Chinese not to lose face with their own people. They were, on the other hand, quite indifferent to a question that from the European point of view was of great importance, namely, the matter of correspondence and letters to newspapers. Liu Fu considered that it was not necessary to bring up this matter for discussion at all.

Late in the evening we had another meeting, Liu Fu, Governor Chou, Professor Lee and myself. Lee was the most reasonable of all the Chinese. He got the stubborn Chou to agree to my above-mentioned suggestions for alterations. As they stipulated that *all* collections, even zoological ones, should be brought from Sinkiang to Peking for purposes of control, I asked them if they could not see how unpractical it would be to transport beetles, scorpions, pressed plants, household utensils and such like over the interminable desert route to Peking instead of sending them up to the Siberian railway and home to Stockholm. But Chou declared that also such collections, that were of no value for China and that I could keep as a matter of course, must nevertheless be inspected and controlled. However, here, too, I got my way, thanks to Professor Lee's sensible and persuasive arguments.

On the afternoon of April 26th the final meeting took place in the third compound of the university. Those present were:

Mr CHOU CHAO-HSIANG, a former governor of Honan; Professor MA HENG, an archaeologist; Mr HSÜ of The Historical Museum; Mr HSÜ of The National Library; Professor HSÜ of The National University, an archaeologist; Mr HUANG WEN-PI, an archaeologist; Mr WU, teacher of physics; Professor LIU FU; and Mr CHANG, professor in archaeology.

I greeted each in turn. They were very polite and smiling.

We sat down at a long table and began immediately with § 13, which ran as follows: No archaeological excavation is to be undertaken by the mission except on such a small scale as will not in a serious way hinder the movements of the mission, and the material thus collected requires no special equipment for transportation.

This was my own version. I considered it unnecessary and degrading to go slaving to collect for Chinese museums when they had made bones about promising me duplicates. But Professor ANDERSSON asked me to change my course and try to do what I could for archaeology. I therefore now suggested the following amendment to § 13: That is to say, archaeological excavations on a large scale may also be undertaken if they do not hinder the movements of the mission.

This amendment has much scope and force if it is compared with § 5, clause a) The Foreign Field Director (S. H.) is empowered to decide the movement of the mission, the time of work etc., in consultation with the Chinese Field Director.

My suggested amendment was accepted without further parley and CHOU's and my signatures were appended then and there.

When everything was settled, CHOU and I sat down at the long table with the others. CHOU signed the Chinese original in two copies and the English version also in two copies. I followed with my signature. A photographer took first CHOU by flashlight just as he sat writing with his brush and Chinese ink, and then me as I sat writing with a pen. The solemn occasion was to be saved for posterity. The Chinese original is elegant and written on paper that is nearly 200 years old, or from the earlier years in the reign of the Emperor CH'IEN LUNG. Finally we broke up the formal meeting and relaxed for the more intimate discussion of some less important questions.

The game was now so far won, and it remained only to see how the program agreed upon would work out in practice. A couple of the Chinese members had evidently very hazy notions of what was in store for them, for they asked if there were inns all the way between Pao-t'ou and Hami, and seemed disappointed when I replied that there was not a single house along the whole route.

FAREWELL DINNER

On April 29th at Pei-hai or the »Northern Sea» at the old Winter Palace a dinner was given at which also Dr Wong Wen-hao was present. The hosts on this occasion were the members of the permanent committee that in our absence was to look after our interests in Peking. Among the guests were the Chinese members of the expedition that I had not yet met, the students Li, Liu, Ma and Ts'ui, the photographer Kung, the young geologist Ting and the topographer Chan. The archaeologist Huang Wen-pi I had met before; and Professor Siu Ping-ch'ang and Dr P. L. Yuan were already my goods friends. At this dinner at Pei-hai Dr Hummel and I now made the first overtures of friendship with our ten Chinese comrades, who were to meet such different destinies in the course of the expedition.

The dinner was in every respect a success. From the first moment I felt drawn to the two English-speaking students Li and Liu, who beamed with happiness at the prospect of setting out on a long journey, during which they would have an opportunity of learning the fundamentals of the science of meteorology. I myself was informed at this dinner that I had been appointed »Honorary Adviser to the Federations of Scientific Institutions of China», an empty title of no real significance. It was nevertheless proof that we had played our cards not without a certain diplomatic skill since I could be considered worthy of being made a sort of honorary member of an institution that for nearly two months had endeavoured to smash up the expedition or at least to limit its freedom of movement in every possible way.

ARRANGEMENT OF MONEY TRANSFER

The last days were taken up with a lot of practical matters. With the postal commissioner M. Picard-Destelan and his subordinates we worked out a method for the paying out of certain sums in Pao-t'ou, Hami, Urumchi and Suchow against the paying in of corresponding amounts to the Deutsch-Asiatische Bank in Peking. A similar agreement was made also with the firm of Faust & Co. in Tientsin. In this way we were freed from the trouble of carrying large amounts of silver with us in the desert. The load we took with us, to wit, 24,000 dollars in silver, was enough as it was. It was to be packed in strong wooden boxes with 3,000 dollars in each, two of which could be carried by one camel. This paying-out system functioned splendidly throughout the whole expedition.

The Peking committee, commonly called »The Board of Directors», exercised its influence at the last moment in some less important questions. It had decided that a special periodical devoted to the expedition and its results should be published in Chinese, but nothing was afterwards heard of any such publication. A suggestion by Lufthansa that a correspondent from NANA (North American Newspaper Association) should accompany the expedition was turned down by the committee, doubtless a wise measure on their part. The committee's decision that all reports and articles written by me should first be published in China was never applied in practice, and in the following years no objection was raised when such reports were sent direct to the Swedish newspapers and circulated in the world press. Finally, it was resolved that Professor AMADEUS GRABAU should in my absence act as my representative in all dealings with the committee.

In several European quarters I had been told that the Chinese contingent would follow me as far as the railway reached or to Pao-t'ou, upon which they would return to Peking. Others knew of old that the Chinese, who are an agricultural people and live on the products of the good earth, have always felt a horror of the desolation, sterility, dryness and terrible loneliness of the desert. *Not one* of the Chinese left us. All without exception followed us into the desert. The Europeans who talk of the Chinese horror of the desert have themselves never set foot outside the pale of civilization. Their description of the Chinese in this respect is contradicted by the lessons of history, by the armies that have been led through the desert, by the merchant caravans, pilgrimages, colonization etc. When the Great Wall was erected as the frontier between the desert and the middle Kingdom this was directed against barbarians, not against the desert.

THE CONTRACT

I have in the foregoing touched upon the course and development of the tedious debate that went on during March and April of 1927 and that finally, on April 26th, led to the signing of the contract between the opposition and myself. In a History of the Expedition this important agreement should not be forgotten, for without it the expedition could never have started. The points of view and the nationalistic demands that find expression in this document are of a more general historical interest and illustrate the Chinese attitude at the dawn of the new epoch that was ushered in by Kuomintang and CHIANG KAI-SHEK's great work of consolidation in China.

Our agreement is in any case the first and probably the last of its kind, and its numerous paragraphs with their far-reaching and ungenerous demands give an interesting picture of the Chinese standpoint of this period.

It is reproduced here in the English version and followed by a number of comments and explanations by me.

AGREEMENT BETWEEN THE FEDERATION OF SCIENTIFIC INSTITUTIONS OF CHINA AND DR SVEN HEDIN FOR ORGANIZING A SCIENTIFIC MISSION TO NORTH-WESTERN CHINA

1. The Federation of the Scientific Institutions of China, hereafter named the Federation, organizes with the collaboration of Dr SVEN HEDIN a scientific mission to North-Western China to be named »The Scientific Mission to North-Western China under the Commission of the Federation of Scientific Institutions of China», hereafter named the Mission.
2. The Federation elects a Board of Directors whose specific function is to supervise and direct the activities of the Mission in accordance with this agreement.
3. The complete Staff of the Mission, both Chinese and foreign, is to be appointed by the Board of Directors, including those already selected by Dr HEDIN, and approved by the Federation; the names, nationalities, qualifications, and duties are to be clearly tabulated and attached to this agreement.
4. The Board of Directors appoints, out of the staff of the Mission, two Field Directors, one Chinese and one foreign; and Dr SVEN HEDIN is to be the foreign Field Director.
5. The duties of the Chinese and foreign Field Directors are as follows:—
    (a) The foreign Field Director is empowered to decide the movement of the Mission, the time of work etc., in consultation with the Chinese Field Director.
    (b) As to the distribution of work, the Foreign Field Director should confer beforehand with the Chinese Field Director, and should secure the latter's agreement before giving orders. In case the Chinese Field Director proposes any method of distribution of work, he should also secure the agreement of the Foreign Field Director.
    (c) The Chinese Field Director is empowered to undertake any dealings with the local authorities.
    (d) The transportation of materials collected is to be entrusted to the Chinese Field Director.
6. The expenditure of the Mission and other necessary equipments are subject to the following regulations:—
    (a) Dr SVEN HEDIN undertakes to pay all the expenses for the complete staff of its food, tents coolies, camels, medical attendance and other necessary expenditure throughout the journey viz., starting from the day when the Mission leaves Peking, and ending on the day when it returns to Peking. Dr HEDIN is also to undertake to defray the expenditure for transporting to Peking the materials collected.
    (b) Dr SVEN HEDIN undertakes to pay the salaries of the foreign staff, and further agrees to contribute $850.00, Chinese currency, per month to the Federation beginning from the day when the Mission leaves Peking and ending on the day when it returns to Peking.
    The disposal of this fund is to be definitely stated in a note attached to this agreement.
    (c) Other related matters are to be dealt with as they arise according to the joint decision of the Chinese and Foreign Field Directors, and are to be reported to the Board of Directors.
7. The Mission is to follow the route: Peking, Pao-t'ou, Sogho-nor, Hami, Ti-hua, Lop-nor, and Charchan. In case of necessity, the Field Directors of the Mission may effect some slight modification with their joint decision. Important modifications cannot, however, be effected unless they are sanctioned by the Board of Directors.
8. The duration of the Mission is not to exceed two years, counting from the day when it leaves Peking.
9. The principal subjects to be dealt with by this Mission are as follows: — Geology, Geo-magnetism, Meteorology, Astronomy, Ethnology, Archaeology, Ethnography.
10. No work should be undertaken by the staff which directly or indirectly infringes national sovereignty or endangers national defence. The Chinese Field Director is fully empowered to stop any such undertakings.
11. Maps prepared during the journey should not exceed the scale of 1:300,000 except for the working areas.
12. Under no pretext whatsoever, are the members of the staff of the Mission allowed to inflict any damage upon buildings of historical and artistic value; and no person in the Mission is allowed to purchase, in his private capacity, archaeological material.
13. No archaeological excavation is to be undertaken by the Mission except on such a small scale as to hinder in no serious way the movement of the Mission, and the material thus collected requires no special equipment for transportation; this is to say that archaeological excavations on a large scale can also be undertaken if they do not hinder the movements of the Mission.

14. The materials obtained by the Mission are to be disposed in two ways as stated below:—
    (a) All archaeological material is to be handed over to the Chinese Field Director or his appointee, and to be delivered to, and deposited with the Federation.
    (b) All geological specimens are to be treated in the same way as stated above. But a duplicate set will be offered to Dr SVEN HEDIN after the material has been examined by the Board of Directors.
15. The records of the field data are to be dealt with in the following ways:—
    (a) Photographic plates or films are to be inspected by the Board of Directors, and a set of prints must be deposited with the Federation.
    (b) All graphic records must be examined by the Board of Directors, within six months of delivery.
    (c) Field notes, sketches and diaries are also subject to examination within six months of delivery.
    (d) Maps are first to be examined, within six months of delivery, by the Board of Directors, who then deliver them to the Headquarters of General Staff for further examination.
    (e) Cinematographic records are to be examined by the Board of Directors within six months of delivery and shown to the public in Peking for the first time. A duplicate copy of the cinematographic film is to be deposited with the Federation. No result shall be published which does not satisfy the regulations as stated above.
16. The preliminary report of the scientific results is to be formally published under the name of the Federation in accordance with the following agreements:—
    (a) There shall be about 200 pages octavo of report for each science, in both Chinese and English languages.
    (b) The Federation shall bear the expenditure in connection with the printing of the preliminary report. One hundred copies of this report shall be presented to Dr HEDIN.
    (c) Except the names of the two field directors heading the list, the names of authors are to be alphabetically arranged.
    (d) The preliminary report shall be completed within two years and six months after the conclusion of the Mission.
17. The detailed reports of the Mission are to be published in accordance with the following agreements:-
    (a) The publication of this series shall take place after the publication of the preliminary report.
    (b) The detailed reports are to be divided into two series. Series A, shall consist of Geology, Ethnology, Archaeology and Ethnography and Series B, Astronomy, Meteorology, and Terrestrial Magnetism. Series A shall be published in China at the expense of the Federation. Series B shall be published in Europe at the expense of Dr HEDIN. One hundred copies of each series are to be exchanged between the two parties, and the rest are left at the discretion of each publishing party.
    (c) All the results in connection with Series A, whether obtained by Chinese or European members of the Mission, are to be handed to the Board of Directors. Those with Series B under the same category shall be handed to Dr HEDIN within six months from delivery, after being examined by the Board of Directors.
    (d) All publications in both Series A and B are to be published under a common title and in the same size and form.
    (e) These publications are to be published under the name of the Federation. Besides the name of the author or authors printed on the cover, the names of the two Field Directors shall be printed as Chief Editors, but with the name of the Chinese Field Director in the first place for Series A, and the name of Dr HEDIN in the first place for Series B.
18. The four meteorological stations together with their instruments and equipments, which have already been offered by Dr SVEN HEDIN to China, will be handed over to the Board of Directors after the completion of the Mission.
19. This English version is a literal translation of the Chinese text, which alone is held to be the official document.

The above agreement in nineteen articles was passed by the Federation at its 8th session on April 17th, 1927, and the Hon. CHOU CHAO-HSIANG is elected as the representative to discuss each article with Dr HEDIN and to sign the agreement on behalf of the Federation, after being fully agreed upon by both parties, under the date April 26th, 1927, at Peking.

Signatures

COMMENTS AND EXPLANATIONS IN CONNECTION WITH THE CONTRACT

§ 1. The name given to the combined enterprise was thus »The Scientific Mission to North-Western China». The word »mission» was used as »expedition» was considered to be derogatory and applicable only among uncivilized peoples. It is emphasized that it was the Federation that organized the mission in collaboration with me and that the enterprise was under the jurisdiction of the Federation. In the English press in China the expedition was generally called simply »The Sino-Swedish Expedition».

§ 2. The Board of Directors, commonly called »The Committee», had its seat in Peking while the expedition was working in the field. Its membership changed as the years went by. The soul and the driving force of the committee was Professor LIU FU, right up to his death in 1934. From the very outset he was our faithful friend, and it was above all due to him that the relations between the European members of the expedition and the members of the committee were always characterized by mutual confidence and trust.

周 夏/文 L 蔡工

§ 3. In reality only the ten Chinese members were appointed by The Board of Directors; all the European participants were of course approved by The Board of Directors in the same way as I naturally approved the Chinese appointments. In the following years many changes in the membership of the expedition took place.

§ 4. Professor SIU PING-CH'ANG was appointed as the Chinese Field Director, and I as the Foreign Field Director. As early as December 1928, or after a year and a half, Professor SIU returned to Peking, where he resumed his professorial chair. The whole arrangement with two leaders of the expedition was thus chiefly intended to save the face of the Chinese, a gesture to the gallery, that in the actual life in the field was completely without significance. We had not progressed very far in the desert before SIU PING-CH'ANG, professor of history and philosophy, openly and candidly assured me that he lacked all experience that might fit him to lead a great caravan through desert tracts where he himself had never been, and that he would be thankful if I would take this responsibility upon my shoulders. He himself was the pleasantest and most congenial travelling companion one could wish for, both as a human being and as a humanistic scholar.

§ 5. The distribution of the two Field Directors' power as it is laid down in this paragraph gave rise to no trouble and no differences, and was actually never spoken of. SIU PING-CH'ANG and I never once mentioned the existence of the contract that had been signed so solemnly and never needed to refer to its stipulations. I certainly took with me a copy of the contract in English, but I have never opened the envelope until now, thirteen years after the signing. Written rules and regulations are superfluous for sensible and educated men who are fighting for a common goal and the final success of co-operation. The contract had, however, given me an unexpectedly free hand in the most important point, namely, the movements of the expedition and the length of its stay at various camping-places. SIU PING-CH'ANG agreed straight away to my proposals, and if ever he expressed a personal wish I supported him whole-heartedly. In a word, there was always the completest harmony between us throughout the whole period of our collaboration.

Clause c) was only to the advantage of the expedition, for it is obvious that negotiations with local authorities in distant parts could always be managed better by our Chinese comrades than by us foreigners. To be able to have recourse in such situations to reliable and friendly disposed Chinese was a most invaluable asset for us Europeans. As regards transports of collections (clause d), all questions of the sort were resolved automatically by whatever transport possibilities there happened to be at the different places.

§ 6. This paragraph was naturally of great importance for the Chinese, and no-one could expect them to bear any of the costs for an enterprise that in reality was European. It was therefore self-evident that I should pay *all* the costs. Equally just was the Chinese claim for salaries to the Chinese members when the Europeans were paid. The general agreement to which I came with Professor LIU FU was that 350 Mexican dollars be paid out in the field to the Chinese members, while he was authorized by me to withdraw 500 Mexican dollars per month from the Deutsch-Asiatische Bank in Peking for the members' families at home. Strictly speaking, this original sum of $850 a month should have been reduced in proportion as the Chinese contingent grew smaller, as its members returned home one after the other; but since nothing to this effect had been mentioned in the contract, and since our expenses were in any case lessened by this successive reduction of the Chinese membership, I did not bring the question up at all.

§ 7. According to the contract, we were to follow the route Peking, Pao-t'ou, Sogho-nor, Hami, Urumchi, Lop-nor and Charchan. The projected route was also followed at first; and if the preliminary expedition had been followed by an air-expedition the route would have been sufficient. But when our flying plans were afterwards disallowed, and the expedition was thus changed into a purely scientific expedition, or rather a series of many different expeditions without other connection than the common command, our activity extended its scope enormously, and spread out over the whole of innermost Asia between Chuguchaq, Kucha, Aqsu, Kashgar, Yarkend, Khotan, Western Tibet, Karakorum, Ladakh, Northern Tibet, Tsaidam, Tebbu, the Nan-shan, Kansu, the Gobi and the whole of Inner Mongolia and Jehol. The liberties we took without once asking The Board of Directors did not lead to the slightest criticism or complaint from their side. At the very beginning of the expedition one had the definite impression that The Board of Directors had forgotten the existence of an agreement, and neither Professor LIU FU nor any other member of the committee ever referred to its paragraphs.

§ 8. The duration of the expedition was not to exceed two years. Already after one and a half years' work The Board of Directors asked us to increase the period by a further two years. In reality we were in the field for six and a half years, or from the Spring of 1927 till the Autumn of 1933. A further year and a half was devoted to the motor-car expedition to and from Sinkiang.

§ 9. The list of sciences to which the researches of the expedition were to extend is not complete, though the matter is of no consequence in this connection. Zoology and botany are not mentioned at all. Palaeontology can be regarded as comprising a part of geology. The Chinese were little interested in ethnography, but I insisted on the inclusion of this science in the hope that in the course of the expedition we might by special grants be placed in a position to make ethnographical collections. At a later stage our activity extended also to geographical work in connection with exploration of unknown regions. Especially in Northern Tibet and around the lower Tarim and Lop-nor and the mountain regions of Peishan did these researches play an important rôle. We also carried out gravitational measurements and surveying. We studied Mongolian folklore and took records of the songs and music in phonograms. And finally, we made a large-scale study of the cult of Lamaism and the Lamaistic art and temple architecture. In a word, the scope of the expedition's researches extended in several directions and the observation material grew from year to year.

§ 10. It goes without saying that none of the members of the expedition intended to encroach on China's national sovereignty or to do anything that might jeopardize the national defence. It is possible that this paragraph was added on account of all the fantastic rumours that were set in circulation in Peking by hostile mischief-makers. From the Chinese point of view the fact that so many Chinese were taking part in the expedition gave a sense of security in so far as their own countrymen thus had an opportunity of following and controlling our movements.

§ 11. The prohibition against drawing maps to a larger scale than 1: 300.000 was simply ignored from the very beginning. It was Professors SIU PING-CH'ANG and P. L. YUAN themselves who saw the absurdity of this clause, and who affirmed that the maps should be drawn to whatever scale the topographers themselves considered suitable.

§ 12. From our side the Federation certainly had no reason to fear any violence against buildings of historical interest.

§ 13. This paragraph is rather unclearly formulated. On the whole, however, it constitutes no hindrance to archaeological work in the field.

§ 14. All archaeological material was taken to Peking. In accordance with later agreements, the whole of the prehistoric collection of archaeological objects made by FOLKE BERGMAN was presented to me. This generosity was largely explained by the fact that Professor P. L. YUAN and Mr HUANG WEN-PI made at the same time similar collections, in part in the same tracts, so that the Chinese museums got their share of the results in any case. Finds from historical time, for example BERGMAN's collection of Han objects from the Edsen-gol, such as household implements, weapons, textiles etc., were to be preserved in China. I afterwards obtained permission to keep these collections in Stockholm for four years as a loan, for classification and investigation by BERGMAN. The objects dug up by BERGMAN, PARKER C. CHEN and myself from graves at Lop-nor, in 1934, were also lent to Stockholm, but only for two years. In March 1935 The Board of Directors promised that duplicates of the historical collections should be given to Sweden. The most important and valuable of all BERGMAN's historic finds were the manuscripts on wood that he found in ruined towers of the Han period on the Edsen-gol. These documents were on no condition to be taken out of China. I shall have occasion to speak of the subsequent fate of this collection of manuscripts in another connection.

As for the geological collections, no notice was afterwards taken of the stipulation in clause b) in § 14. The collections of rock samples thus came permanently to Stockholm. Certain groups of the palaeontological collections are being investigated by European experts, while other sections were left behind in China to be dealt with by Professor GRABAU and Chinese specialists. A part of this valuable material was given to the custody of The Geological Survey of China in Nanking. When the Japanese attacked the capital at the end of the year 1937, the premises of The Geological Survey were plundered and destroyed, and at the end of 1939 I was informed that certain collections were then taken to Japan. Whether or not this is true I cannot yet say.

§ 15. This paragraph, with its five clauses, seems at first sight appalling. Like all the other paragraphs, however, it turned out quite differently in practice. A representative selection of the photographs was sent to The Board of Directors, and a couple of copies of the film at about the same time as it was shown publicly in Europe and America. Most of the expedition's European members and some of the Chinese had their own cameras. Herr LIEBERENZ had, moreover, nothing else to do but take photographs. To submit all these thousands of photographs for the approval of the committee in Peking would have been impossible, nor did The Board of Directors require this.

Still more absurd would it have been to hand over our diaries, notes, sketches etc. for inspection by the committee. Further, if all maps had been submitted to the committee, to be then entrusted to the general staff, this would have been tantamount to bidding a long farewell to our valuable chart material, or in the best case to submitting ourselves to an arbitrary discussion as to which points should be regarded as of strategical importance and therefore unsuitable for publication. Also this point, however, gave rise to no difference of opinion or any demands from the committee's side.

§ 16. We had lively discussions concerning a Preliminary Report, in which each specialist was to give a 200-page account of the essentials in his scientific work in the course of the expedition, together with his most important results. As there were a large number of specialists, and the reports were to be published in both English and Chinese, the Report would have been a very voluminous affair. But this plan went the same way as the suggestion that the expedition should have its own periodical in Peking, devoted solely to the affairs of the expedition. Both the periodical and the report were pious wishes that never got any further than the paper they were written on. There was no further mention of either. When about Christmas 1928 I published my first popular travel-book from the expedition, first in Swedish (»Åter till Asien») and afterwards in other languages, including English (»Across the Gobi Desert») and Chinese, this book was considered as covering the need for a Preliminary Report.

§ 17. Some of the agreements mentioned in this paragraph were for practical reasons followed only in part. The principle by which we have been guided has been that the whole of the palaeontological and the prehistoric archaeological material should be published in the famous Chinese scientific journal »Palaeontologia Sinica», while the whole of the remaining material is included in the series of scientific works on the expedition which is being financed by the Swedish state and by private patrons, and to which the present work is the introduction. Dr HUMMEL's entomological collections were published, under the editorship of Professor YNGVE SJÖSTEDT, in the Zoological Archive of the Swedish Academy of Sciences at the expense of the academy.

§ 18. The four meteorological stations that according to my original plan were to be established on the Edsen-gol, in Charchan, in Urumchi and in the Bogdo-ula were at my suggestion to be presented to China at the conclusion of the expedition. This plan was also carried out, and the whole of the instrumental equipment was also handed over to the Chinese. Under the superintendence of the very capable head meteorologist, Dr COCHING CHU in Nanking, the stations would doubtless have become permanent institutions if the civil war in Sinkiang had not put a stop to their activity.

In the above analysis of the nineteen articles of the contract I have shown how the conditions laid down by the Chinese worked out in practice, in our daily work together in the field. Everything turned out in the most satisfactory way, without misunderstandings and without friction, thanks to the good will and the spirit of comradeship that developed between white and yellow during the whole working period of the expedition. That the Chinese claimed for their own museums all the archaeological objects having a direct connection with China's early history was in complete conformity with the legal regulations in all civilized countries. The interest in fossil animals and plants was due to the high international standing of The Geological Survey of China and to the importance of the periodical Palaeontologia Sinica. Even if the costs entailed by the participation of the Chinese members and their salaries constituted a very perceptible economic burden, one must bear in mind the fact that the Chinese contingent was of great practical use to us and also that it was a source of much personal satisfaction to me to give a number of young Chinese a chance of modern scientific training under European leadership.

COMPARISON WITH THE ANDREWS EXPEDITION

ROY CHAPMAN ANDREWS's great American expedition lasted, though with some interruptions, for a period of ten years and cost $600,000, or almost exactly the same as my expedition amounted to. But while mine went on uninterruptedly for eight years ANDREWS's expedition was in the field only during the warm half of the year, or from April 1st until October 1st. During the winter months his experts were busy preparing their palaeontological and other collections. For this purpose they had set up laboratories in their head-quarters in Peking.

Time and again ANDREWS himself used the winter months for a journey to America to look after the affairs of the expedition and to raise funds for its continuation. It always falls to the lot of the responsible leader to see to the financing of these large enterprises. While the field work in my expedition went on without interruption winter and summer I was myself also obliged to journey home on three occasions and to visit America twice, partly to see to innumerable practical matters and partly to raise funds.

ROY CHAPMAN ANDREWS was leader of his expedition during the whole period, from 1921 till 1930. His second in command, WALTER GRANGER, was also in harness from 1921 till 1930. The other American participants carried out their field work or their technical jobs during shorter periods. J. MCKENZIE YOUNG, in charge of the motor-transport, served from 1923 till 1930, CLIFFORD H. POPE, the herpetologist, from 1921 till 1926, the three geologists CHARLES P. BERKEY, FREDERICK MORRIS and GEORGE OLSEN served for three years, while most of the other members were only in the field for a single season. In my expedition NORIN was with us for about eight years, BERGMAN for nearly seven and a half, SÖDERBOM for about seven years, CHEN between five and six years, HUMMEL, BEXELL, AMBOLT, HAUDE and YUAN about five years, BOHLIN and HÖRNER over four years, MONTELL over three and a half years, HASLUND three and LARSON two years. Of these, BEXELL was working in the field uninterruptedly during four whole years.

The difference between ANDREWS's working methods and my own is explained chiefly by the fact that he was in the field for half the year while I was in the field all the year round. He was a firm believer in correlated work, and all the different members of his expedition collaborated, whereas the different scientists in my expedition worked independently. The difference in our respective methods of work was also largely due to the fact that our sphere of operation was much more extensive than was ANDREWS's and we did not use motor-cars, which might have connected up the different part-expeditions or groups. But in those parts of Central Asia where we were working there were chiefly deserts and mountains, and motor-cars could in any case have been used only to a limited extent. The relatively smooth and hard Mongolian plains, on the other hand, afforded splendid motor conditions nearly everywhere.

In spite of the intimate collaboration that was maintained, ANDREWS's great expedition was almost continually divided up into several parties. Frequently there were four camps from twenty to a hundred miles apart. The chief item on their working program was palaeontology, and from 1925 palaeo-botany; further, geology, archaeology, zoology and topography.

In the »Natural History of Central Asia, Volume I: The New Conquest of Central Asia» ANDREWS gives a masterly survey of the course of the series of magnificent and richly fruitful expeditions that were carried out under his able and skilful leadership. While the following eleven volumes in the series contain monographs by different specialists, ANDREWS himself gives in this first volume the main lines and the chief results achieved during the whole of this great and meritorious American enterprise. I have thus taken ANDREWS as my model in introducing our series of scientific monographs with the present »History of the Expedition», which is also intended to give a bird's eye view of our expeditions during eight years.

In his Chapter XXXI, »Preparations for the 1928 Expedition», ANDREWS has a sub-heading, »Rise of the anti-foreign movement in China», under which he describes the revolutionary political events of the winter 1926—1927.

ANDREWS speaks of the apprehension bordering on panic that was felt in Peking, where all the foreigners were expecting the latent violence in the air to explode at any minute. He himself found it impossible to go ahead with the execution of his plans during the year 1927.

> »The prospects for continuing our explorations in Mongolia could not have been blacker. Even had I been able to get the Expedition away from Peking, the American Minister would have prohibited us from leaving. Hardly a foreigner was left in China away from the seaports. Still, it was most disheartening to face another season of inactivity.»

Under the heading »The SVEN HEDIN Expedition» ANDREWS gives a short account of my plans, and continues:

> »An anti-foreign group which called themselves »The Society for the Preservation of Cultural Objects» had launched a bitter newspaper attack not only upon Doctor HEDIN but upon all foreign expeditions. They claimed that China was being 'robbed of priceless treasures' even when such 'robbery' was limited to meteorological observations, geologic specimens and fossils. The Society was an entirely unofficial organization, but by false publicity it had succeeded in arousing such popular indignation that the government authorities dared not ignore its activities. After months of delay Doctor HEDIN was forced to abandon his program of aeroplane exploration. He endeavoured to save something out of the wreck by proceeding by camel and carrying on other forms of scientific investigation. Even then the Cultural Society insisted that

> a Chinese be appointed as co-director of the expedition and that all of the collections be given to the Chinese. In addition he was forced to accept ten Chinese students and 'professors' as members of his party.
>
> Rather than abandon his entire expedition, Doctor HEDIN at last agreed to these extraordinary demands. While I thoroughly understood and sympathized with Doctor HEDIN'S position, it was obvious that his acceptance of such preposterous conditions would make it extremely difficult for other expeditions to carry on their work. My predictions were amply justified by future events. By the time Doctor HEDIN was allowed to leave, conditions in the interior had improved sufficiently to make it safe to go with a large party such as his. It was then much too late for our expedition to start, since our working period was of necessity limited to the summer months.»

The pessimism to which ANDREWS here gives expression proved, as I have already related, to be much exaggerated, and none of the »preposterous conditions», that were laid down in Peking was actually applied in practice. I had thus judged the situation correctly, and on my return to Peking the Chinese offered of themselves to give me duplicates of the palaeontological and historical-archaeological collections. That in the future it would be »extremely difficult for other expeditions to carry out their work» was none of my fault but a consequence of the wave of nationalism that marked the inception of the new epoch and came sweeping up from the South over the whole of China, bringing in its wake the fanatical hatred of foreigners of which ANDREWS himself speaks. If I had not accepted the Chinese conditions, but broken off all negotiations and gone home, this would simply have meant that if not ANDREWS's then some-one else's expedition would have been the first to meet the demands of the Chinese academic opposition. It is possible that the conditions would then have been made even more stringent than those laid down in the contract between the opposition and myself. The story, insignificant enough in itself, that ANDREWS had given away a dinosaurus egg in the United States as a quid pro quo for the contribution of a considerable sum towards the costs of his expedition, was unfortunately retailed by the American press; this was of course pounced upon with delight by the opposition in Peking, and undoubtedly damaged ANDREWS a good deal more than my contract did.

On his 1928 expedition ANDREWS followed our route to the West, but did not get as far as half way to the Edsen-gol.

In March 1929 ANDREWS entered into negotiations with »The Commission for the Preservation of Ancient Objects» of which the chairman was Professor MA HENG and members Dr WONG WEN-HAO and Professor LIU FU. The conditions this committee sought to impose on ANDREWS were on the whole the same as those I accepted. An extra demand was that Chinese experts should co-operate with the American experts in The American Museum of Natural History and that the travelling expenses of these Chinese to and from New York as well as their living expenses during their stay in the States should be met by the same museum. ANDREWS says (p. 421 op. cit.): »These conditions we could not accept, and after weeks of negotiations the expedition had to be abandoned».

That these conditions were unacceptable was perfectly natural. ANDREWS was travelling for the account of a museum of natural science for the purpose of adding to its collections. If he was not to be allowed to keep the collections he made, his expedition would be meaningless. For why should his first-class experts work like slaves for the account of Chinese museums and at their own expense to boot! My aims were different. I was not collecting for any particular museum. It was enough for me that my palaeontologists collected, classified and published accounts of their finds to make them known to science. Whether the collections themselves landed up in Peking or Stockholm was a matter of secondary importance.

ANDREWS goes on to say that the treatment he received at the hands of the committee aroused such indignation all over the world that for the next, and last, year's (1930) campaign he succeeded in obtaining acceptable conditions. However, he limited his research activities to palaeontology, geology and topography.

Definition of the term »Central Asia»

Sinkiang and Russian Turkistan, Afghanistan, the Pamir, and the western part of Outer Mongolia are the parts of innermost Asia that in general should be understood in connection with the term »Central Asia». The parts of Mongolia where ANDREWS's expeditions were at work belong rather to the peripheral regions or, according to RICHTHOFEN's division of the continent, to intermediate zones between Central Asia and the peripheral regions. »A New Conquest of Central Asia» is thus a title that covers only a rather small part of the area we refer to as »Central Asia».

But whatever we may call the tracts that ANDREWS and his expeditions explored so thoroughly and so well, they none the less cover a vast extent of territory; and even if ANDREWS's activities were cut short by the Chinese opposition they are in any case in themselves an organic and complete chapter of pioneering importance. The work carried out by ANDREWS, GRANGER and their comrades will always be accounted a milestone of the first order in the history of Asiatic exploration; and in the record of scientific geographic research their names are assured a permanent and honourable place.

Whether it was I who by yielding to the demands of the Chinese raised obstacles in the way of later foreign-led expeditions on Chinese soil, or whether it was the expeditions that immediately preceded mine that with their acquisitions of specimens in the fields of natural history, archaeology and art made it so difficult for me to come to an agreement with the Chinese is now of no practical consequence and is scarcely of any historical interest. What conditions may follow the establishment of a more or less stable peace we do not know. There are certainly no grounds for over-optimistic hopes.

As far as I myself am concerned, I never had occasion to regret my acceptance of the conditions laid down by the Chinese.

THE START FROM PEKING

Finally, on May 8th 1927, dawned our last day in Peking. For six whole weeks the German and the Swedish members of the expedition had been in Pao-t'ou all ready to start, and for more than two months the tug-o'-war with the opposition had gone on when at last the hour of liberation struck.

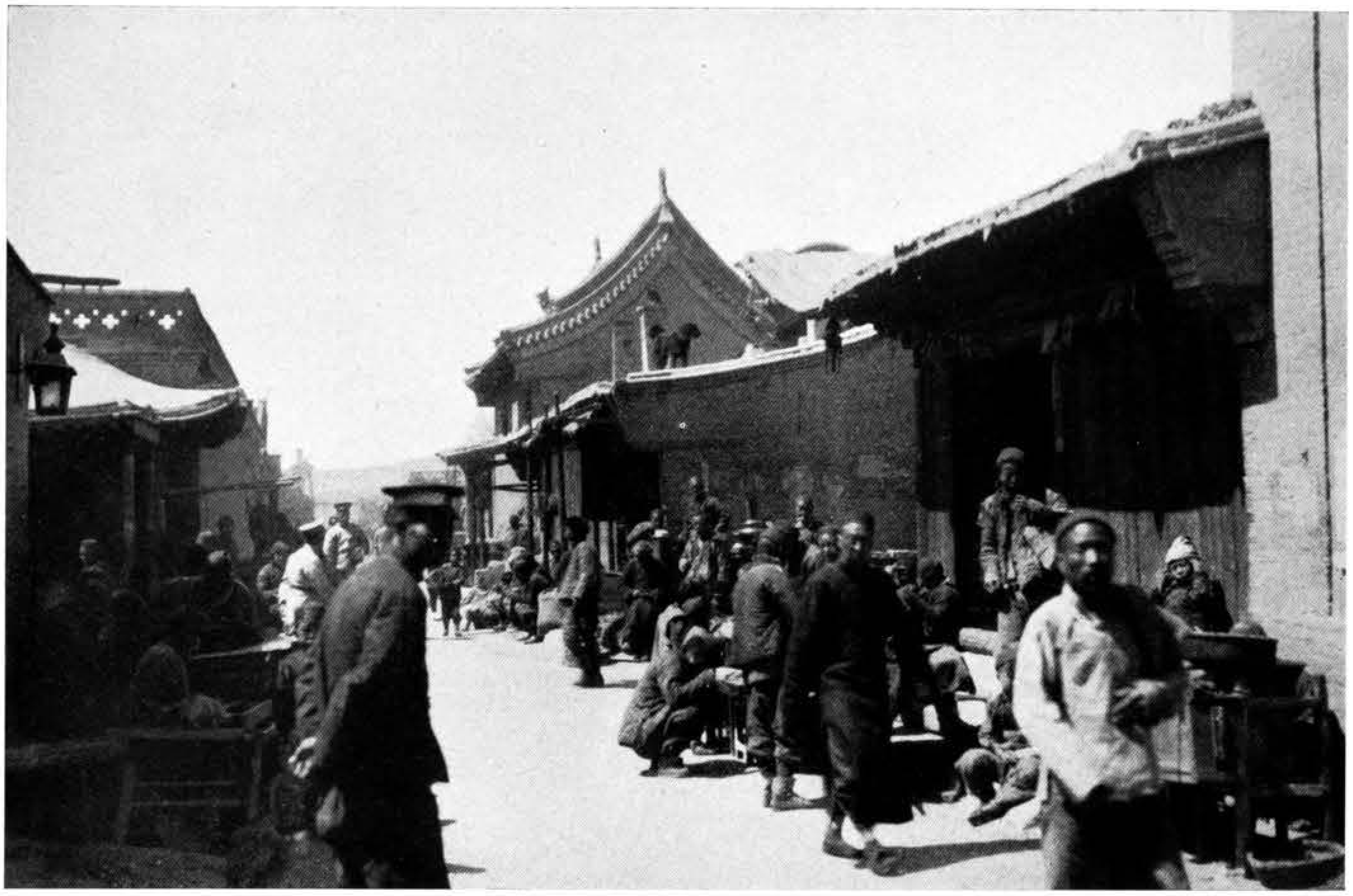
Our train was to leave Peking about noon on May 9th. At the Hsi-chih-men station outside the north-western corner of the Tartar City several of our European and American friends, many of the professors and students of the university, and our Board of Directors had gathered to wish us God-speed. There was now not the slightest trace of dourness or ill-will among the Chinese gentlemen who had been our opponents. They all beamed with good-will and assured us of their best wishes. A little episode occurred just before the train left, that was at the same time characteristic of Chinese mentality and an echo of a time long past. Old CHOU, the chairman of our Board of Directors, stepped forward and handed a paper to each member of the expedition, two Swedes and ten Chinese. On the paper was written the following poem in Chinese:

»The T'ien-shan to the north and the great desert Shamo to the south!
The grassy plains delight you with their smiling green, the boughs of the willow-tree sway cheerfully.
Glorious is this new penetration to the north-west.
You ride on camels and wear the apparel of travellers.
You drive antelopes before you and shoot black eagles; you eat dried meat and drink sweet cream.
You measure the earth and ransack the heavens, interpreting the riddles of space and lifting the veil from unknown forgotten times.
You open the portals to antiquity and discover hidden treasures.
Leaving with empty hands, you return with precious burdens.
You contribute to the cultural wealth of the nations and write descriptions for those in far countries.
Time is flying, the responsibility is heavy, the journey will be long.
Let us unite our forces in the struggle to the common goal and with confident hearts wipe out the boundary-marks between Europe and Asia!
Let us abandon the narrow sentiments of nationalism and unite in the infinite pleasures of comradeship.
I have composed this hymn to greet you on your departure with eternal song.»

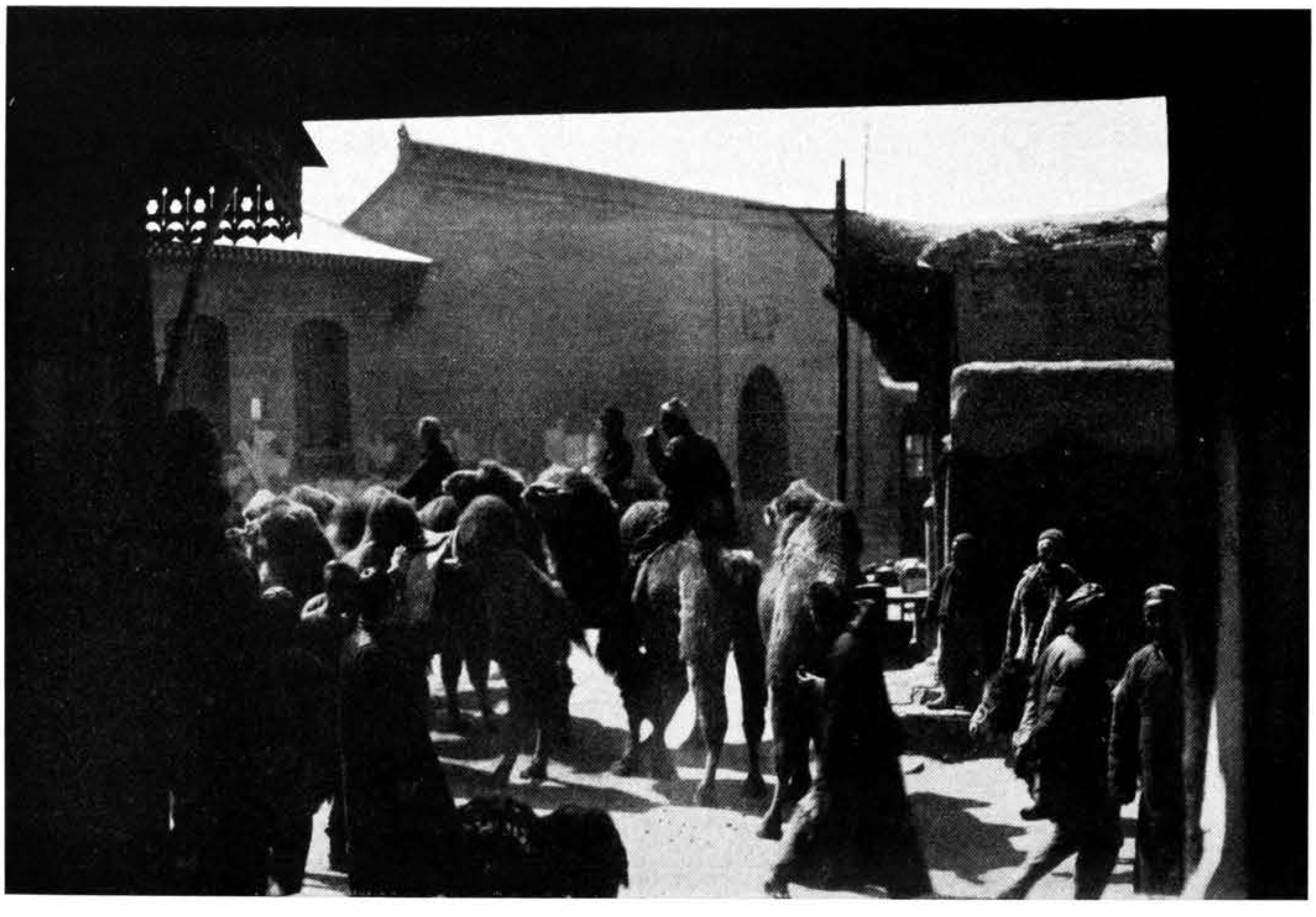
The author of this dithyramb had for two months been our most implacable and obstinate opponent, and in every way more fiercely nationalistic than anyone. Yet when the genius of poetry entered his soul all his fences and palisades of separation fell down like a pack of cards and his »eternal song» was as it were the prelude to the comradeship and the harmonious collaboration that afterwards prevailed in our wandering community.

FROM PEKING TO PAO-T'OU

The train took us over the level alluvial plains with their villages, fields and groves of leafy willows and poplars, their roads upon which wanderers, waggons and pack-animals crept along; and the Western Hills, whose dim contours had

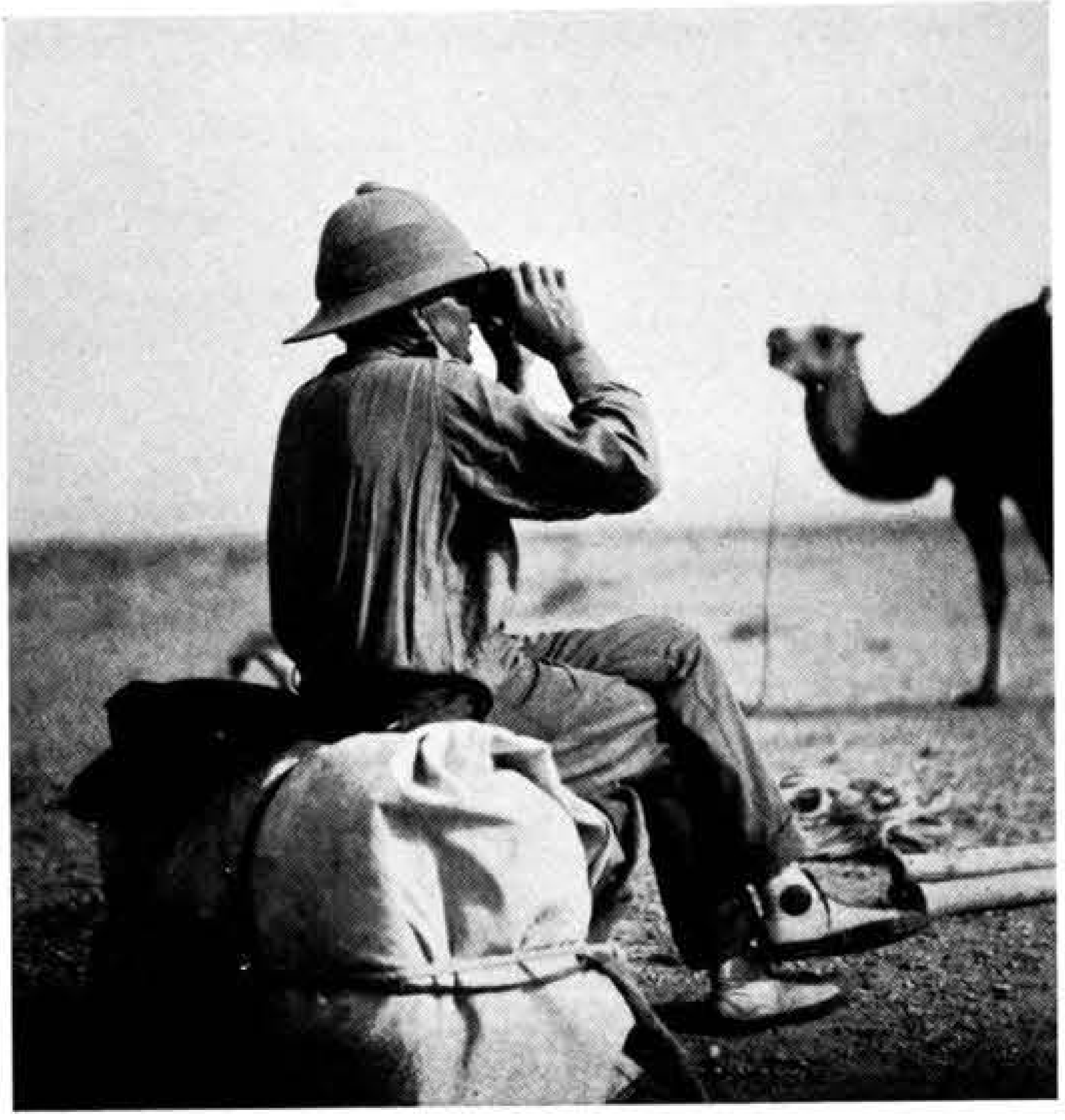


Street-life in Pao-t'ou *Lieberenz Photo*



Our camels passing through the gate of our Pao-t'ou headquarters *Lieberenz Photo*

PLATE 8



Lieberenz Photo

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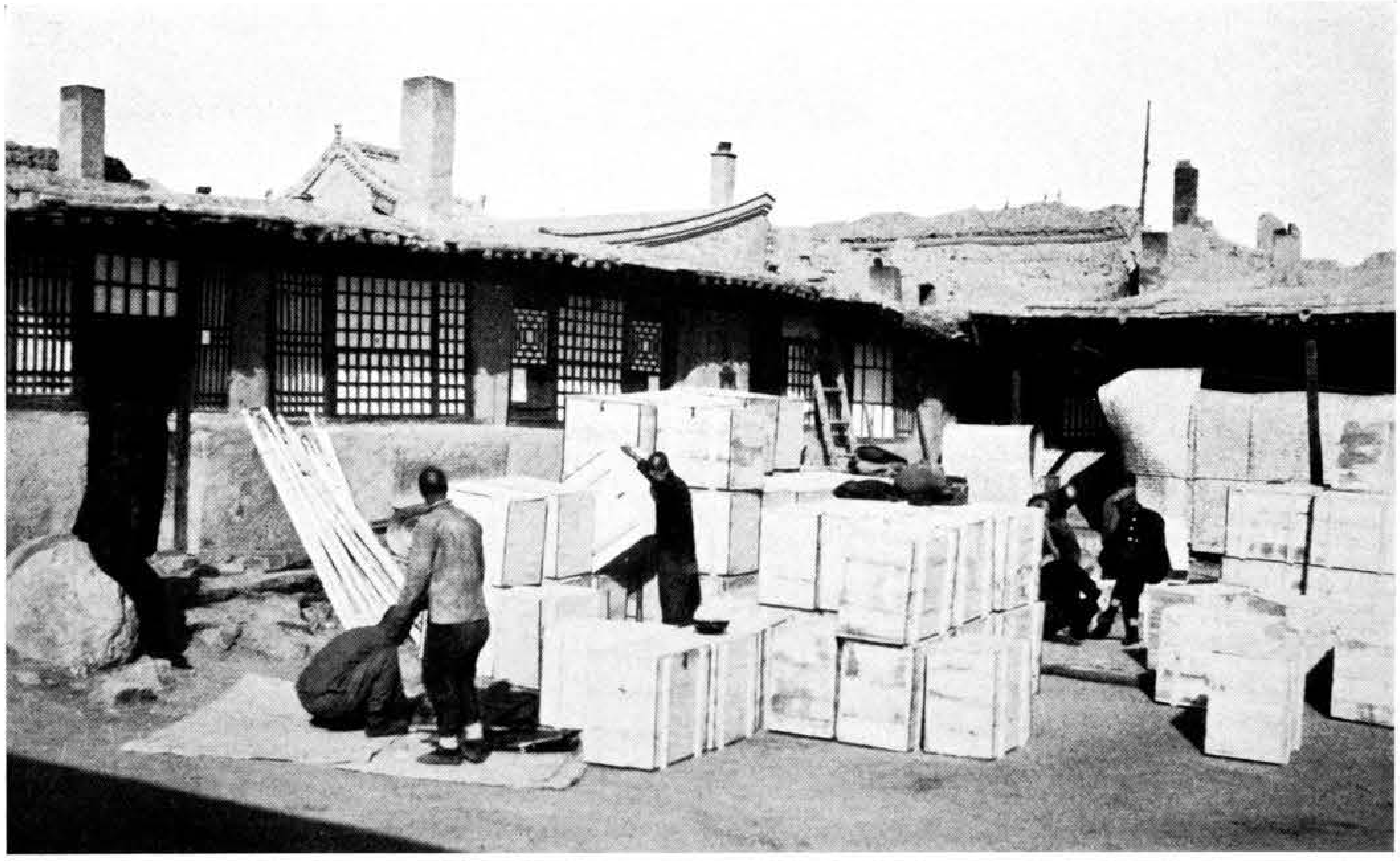

Lieberenz Photo

Manufacture of camel chests at our Pao-t'ou headquarters hitherto appeared but faintly silhouetted on the horizon, began to stand out in clearer and clearer detail, until at last one saw in their recesses the rocky gap that is the opening of the Nan-k'ou Valley. Just as the train entered this valley a Spring storm, dark with flying dust, came sweeping over the landscape, and the interesting scenery was obscured. The Great Wall with its picturesque creepers on either side of the valley disappeared, and the interior of our carriage took on a grey tone of dust and powder.

This carriage had been placed at our disposal by the Government, but we had to pay a pretty penny for the hire of it.

It is dark as we pass Kalgan. During the night and the following day we continue on our journey westwards between fields and villages. In the north rises the Yin-shan, otherwise known as the Ta-ch'ing-shan.

At Kuei-hua, the capital of the province Sui-yüan, Dr ERIK NORIN came down to the train to greet us on our way through. He was in Kuei-hua purchasing provisions.

The railroad stretches further to the west, following the southern foot of the Yin-shan, whose ridges stretch as far as the eye can see. To the south the plain carries the gaze imperceptibly downwards to the Huang-ho, of whose mighty stream we can only glimpse a couple of bends. Towards evening we arrive in Pao-t'ou, the little town where thirty years previously I had spent a couple of days with Swedish missionaries.

IN PAO-T'OU

The European members of the staff were on the platform to meet us. The heavy silver chests and the rest of the baggage were loaded on to ox-carts, while we ourselves drove or rode to the south gate of the town and so to our new headquarters. The house we had hired for the purpose contained fourteen rooms, a dining room and kitchen department with three cooks. In the courtyard was a whole mountain of boxes containing the tinned provisions we had bought in Tientsin. In a sheltered corner Dr HAUDE had his meteorological observatory. In a little enclosure we found the eleven magnificent camels that LARSON had acquired. As the fate of the expedition had hung in the balance for two months he had not been able to begin a systematic purchase of camels. This would, moreover, only be possible in Inner Mongolia, whither we planned to remove with the help of hired camels as soon as all the preparations in Pao-t'ou were concluded. To have acquired the three hundred camels we needed, with Pao-t'ou as our base of operations, would have been too risky. YEN HSI-SHAN, the well-known governor of Shansi, had quartered a considerable garrison in the town, and the streets were swarming with soldiers. We knew that the military confiscated camels without scruple if they were needed, and the further we got away from the military centres the better.

The staff had been waiting since March 24th with a rising uneasiness for the final decision from Peking. Time had hung heavy on their hands. The prefect and the mayor had been friendly, and had granted them permission to go for rides in the immediate neighbourhood of the town. They refused, however, to take the responsibility for longer excursions, as the whole region was said to be too infested by robbers for safety.

Twenty-two members of the staff were present at our first common dinner. We were, as I said on this occasion, on the threshold of a great enterprise, and it should be a point of honour for each one of us to show the gloomy prophets in Peking that Europeans and Chinese could indeed live and work together in harmony, each striving to realize the same high aims.

For nine days we were obliged to remain in Pao-t'ou, chafing to be off. The hired camels could not be placed at our disposal before May 18th. In the meantime we busied ourselves with the innumerable practical matters and purchases that are always entailed in the equipment of a large caravan. It was at this time that GEORG SÖDERBOM was enrolled as assistant to LARSON. He was the son of a Swedish missionary, born in Kalgan, and only 23 years of age. He spoke Chinese fluently as well as Swedish and English, and also some Mongolian and German. As he had spent the whole of his life in this borderland between China and Mongolia he was a very valuable asset for the expedition, and he remained in my service nearly seven years.

We had no need to be idle. The provisions were re-packed in their four hundred boxes in such a way that only one box would need to be opened every day. Thus every box contained a selection of tinned food: soup, fish, corned beef, sardines, vegetables etc., as well as spices, biscuits, sugar, tea and coffee etc. Rice and flour were kept in stout sacks. Each member was responsible for his private belongings, clothes, books, writing material, photographic equipment, instruments and so on. The owners' names were painted on the wooden boxes so that they might be easily recognized at the camping-places.

As our courtyard was too small for the loading of the camels we moved on May 16th to an inn outside the town, just near the north-western town-gate. There we had room enough and to spare, and we preferred to set up our blue and white Mongolian tents rather than sleep in the dark and dirty little holes that the innkeeper might have placed at our disposal. The four hundred boxes, the sacks and bundles containing tents, sleeping-bags, pillows and blankets were taken out through the town-gate in ox-carts. When three-quarters had already been transported the remaining carts were stopped by the sentries and the customs, who declared that we must pay *likin* or inland duty, a tax from which the Ministry of Finance in Peking had promised to exempt us. Professor SIU and

I argued with the customs, the mayor, and finally even the general in command. But to no avail. The remaining carts were detained until we had paid 400 silver dollars. Professor SIU and a couple of the other Chinese were so indignant over this arbitrary treatment that they wanted to return to Peking to lodge a complaint. They rightly considered that an expedition that stood under the protection of the Government and had passports ought to be allowed to pass unmolested, at least in tracts so near the capital. I realized, however, that such complaints would only lead to fresh *tracasseries* and further waste of time, so I calmed down our Chinese comrades by reminding them that Pao-t'ou was the last town we should be passing through, and by suggesting that we could content ourselves with a written complaint sent through the post.

III. FROM PAO-T'OU TO KHUJIRTU-GOL

At last the merchants whose camels we had hired for the transport of the expedition and its baggage to a tract 150 kilometers to the north of Pao-t'ou reported that their animals were ready for the start; and early on the morning of May 20th the camels were brought to our inn. Our paraphernalia, comprising about 500 loads, was already roped up and placed in long rows in the courtyard of the inn. In files of about ten the camels were led in between the loads, which were then lifted up in twos onto their pack-saddles and made fast. The general in command had given us an escort of thirty soldiers mounted on Mongolian ponies and armed with carbines or Mauser pistols. LARSON reported all clear and I gave the order to start.

I waited for a hundred and fifty of the camels in different sections and led by their pullers to pass by. The members of the staff spread themselves in small groups or in twos alongside the procession and the soldiers rode on either side. I took my place in the cavalcade, about in the middle. The camels who bore the costly and sensitive instruments were carefully watched and were, moreover, especially quiet beasts that had been chosen for the purpose. Four camels were loaded with the eight heavy silver chests, each containing 3,000 Mexican dollars. Nineteen of the camels bore the thirty-eight hydrogen cylinders which also called for particular care.

I turned round and saw the column growing and lengthening. We were off at last. The great expedition to the heart of Asia had begun.

The first day's march takes us to the north-west. With low hills to the right and in front we at first follow the great highway flanked by a single telegraph wire, to Patse-bulung and Wu-yüan. Now and again we pass a decayed village of yellowish clay huts and walls in ruins. FENG YÜ-HSIANG's troops have been this way; and bands of robbers have swept through on plundering raids. The ragged country population bears witness to poverty and distress. Here and there we see a peasant ploughing his field with horses or oxen. The only means of transport are carts with two massive wheels. Most of these are loaded with camel's wool or steppe-tussocks, which are used as fuel in Pao-t'ou. Black donkeys are also used for transport.

Beyond the village of Gun-khuduk we approach the foot of the mountain.[1] To our left is an irrigation canal with piles in the bank. The grey, monotonous landscape is otherwise bare; the dry dust is whirled up by the camels' feet. At a distance of some kilometers, to the west, we see the white buildings of the monastery Khundulun-sume. Outside a square enclosure of clay we set up our first camp. The camels are freed from their loads. The blue Mongolian tents are put up by their owners and the routine that is soon to become a daily habit is begun. Even on this first day the whole camp was ready in record quick time. I preferred to have my sleeping-bag on canvas on the ground — the others had iron camp-beds, though these were afterwards abandoned as being too heavy and troublesome. Six members of the staff were still missing, but we had, none the less, no fewer than sixteen tents. Among these, and higher than the rest, was the double-roofed, light-green mess-tent where the common meals were to be taken.

LOCAL STORM

In the afternoon we witnessed an imposing phenomenon of Nature. A cyclone from the north-west came sweeping over the tract around Khundulun-sume and whirled up such dense clouds of dust and fine sand that even the nearest tents were blotted out. The violence of this local storm was terrific; four of the sixteen tents were levelled with the ground and the sun-roof of the mess-tent was ripped to pieces. All maps, diaries and lighter objects were quickly thrust into boxes lest they should be blown away. The storm was over in a few minutes, leaving behind a curious stillness.

As dusk was falling the two hundred and thirty-two camels were led forward to their loads, where they had to lie and chew the cud all night, to be ready for the re-loading in the morning. Camels are not let out to pasture during the night, as they cannot see to browse in the dark. Two Europeans and four soldiers were detailed off for sentry duty. The latter requested that no-one should leave the camp during the night lest they be shot by mistake on their return.

ALONG THE KHUNDULUN-GOL

The second day's march took us nearer to the mountains in the north-west. Although the year was not very far advanced the night was nevertheless chilly — at 5 a. m. only 8.8° C.

The road soon leads into the Yin-shan and the little valley of the Khundulun-gol, following the course of this purling little brook. The vegetation becomes comparatively rich; in sheltered crannies flourish wild roses and blue iris; the valley widens into green meadows.

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[1] Yin-shan, which on the maps is also called Wula-shan, Ula-shan or Muni-ula (PRJEVALSKY'S Muni-ulla). F. B.

Some of the villages we come to seem to be abandoned, yet even here the fields appear to be freshly ploughed. Other villages borrow a pastoral air from willows and wild elms. Time and again we come across grim evidence of the passage of the »Christian» general, FENG YÜ-HSIANG — pieces of shrapnel, a couple of aeroplane motors and the wreckage of two motor-cars. No wonder the countryside looks desolate and abandoned where Chinese war-lords have passed by.

The valley of the Khundulun-gol becomes wider and more open. The road follows the left foot of the mountain. The brook here forms long pools or meres rich in algae. The lush meadows are a relief to the eye in this grey-yellow, desolate countryside, so poor in vegetation. We camped, this second night, at the village of Wu-fen-tze.

On the morning of May 22nd the guard was changed; our thirty soldiers with their white and red arm-bands returned to Pao-t'ou and were relieved by twenty others with yellow and red arm-bands and a standard having the same colours affixed to the lance of the leader. We were now coming to the district that was supposed to be most infested with bandits.

ADVANCE OF CHINESE PEASANTS

Wu-fen-tze is surrounded on all sides by low hills. At a little distance begins an extensive plain, a broad longitudinal valley between two low mountain-chains. Everywhere the soil is cultivated or has recently been under the plough. The products are oats, mustard, and opium. Not many years ago this tract was inhabited by Mongol nomads, who sold their pasture-lands to Chinese settlers for trifling sums. Unfortunately it is the poppy that is chiefly cultivated — this poisonous flower that encroaches on areas that might be devoted to cereals and that undermines the physical and moral forces of the people. A few Mongols still live here in this region invaded by Chinese peasantry; but they are doomed to disappear unless for some reason the Chinese are forced to move south again. They have little chance of defending their old positions in competition with the tough Chinese peasant, with his uncanny skill in the mysteries of agriculture. The Mongolian tribes, descendants of CHINGGHIS KHAN's once so powerful people, are now being pushed slowly and surely northwards. I had noticed a similar movement on my motor-car journey from Kalgan to Urga in the year 1923. These peaceful migrations are doubtless somewhat disturbed by the long civil wars. In the fields of the village of San-fen-tze we saw only a single peasant with a plough and a couple of black oxen.

As we proceeded we saw evidence of quite a lively traffic between and through the small villages we passed. The fields here were watered by little canals flanked with elms. In a strong north-westerly wind we went on between low hills. It was impossible to make out with the naked eye in what direction the ground we traversed was falling. The wind had a velocity of eighteen second/meters, and dust whirled in dense clouds over the countryside, so that one could only see the nearest hills on either side of the route. There was something delightfully fascinating in following with the eye this winding string of camels, growing gradually less and less distinct, till the leaders were lost in the haze ahead. Now and then a »wind devil» would come whirling with cyclonic violence from north-west to south-east over the yellow-grey steppe, and if one happened to be in the path of such a gust the unwary rider might lose his balance and be thrown out of the saddle. At 6 p. m. the temperature was still only 12.0° Centigrade. We camped at the village of Nao-pao-tien.[1] Our night-watch comprised six soldiers, four students and two Germans, who were relieved every other hour. The district was considered unsafe, especially in stormy weather.

Nao-pao-tien has its own coal-mine, but the coal is of poor quality and the villagers came trooping up with baskets to collect our camel-dung as we set off on May 23rd.

We continued in a north-westerly direction, entering a valley in a low range of mountains.[2] Slowly we mounted the narrow, winding valley. Its soil was sand-bound, while the rocks were of crystalline slate and granite. The valley led up to a little pass on the other side of which an old stone wall followed the ridge of the hills to the left of the route — an old frontier wall outside The Great Wall. At the top of the pass was a little cairn of stones. The next pass was at an altitude of 1700 meters according to the barometer. On the yonder side of this pass the road led down to an inn called Niu-chang-wan or »The Bend of the Cow's Gut». The valley here was narrow and squeezed in between steep mountain-walls. Terraces of three meters in height limit its erosion bed. Mountain doves and partridge are common, but magpies, that were common enough in the willows and elms of the plains, were not to be seen here. The valley soon widens, and the countryside becomes more open and flat. In leaving these mountains behind, one comes to a village near Jagarin-gol. We camped at the village of Hung-wa-tze-kung-tsung. At 9 p. m. we lay down to sleep, to be awakened next day at 4 a. m.

HO-CHIAO, A BELGIAN MISSION-STATION

The country before us formed long undulations, the ridges and troughs of which were distinguishable only by the greater or lesser remoteness of the horizon. Little by little, however, the ground became more even — every now and then one saw traces of the plough, and a little village. Near one of these we saw by the wayside a votive altar with an image of Buddha, about two feet high. Presently we approached a village resembling a fortress with corner towers. The Chinese call this place Ho-chiao; the Mongols pronounce it Khajo. After some hesitation the armed soldiers on the battlements opened the village gates and we were led through a narrow street between yellow-grey walls to another wall with gates. At this point one was confronted with a square tower with the Christian cross on the spire. We had come to one of the stations of the Belgian Catholic Mission. Two of the missionaries were at home, Père ERNEST DIELTIENS and MARTIN VERMEULEN. They were prepared for war-like eventualities, and kept within their walls, always ready to meet attack. The route we had come, they said, was called Ta-ku or »The Great Valley»; a more easterly route, leading through dangerous bandit-ridden tracts, was called Hsiao-ku or »The Little Valley». They told us stories of assaults and murders in their station and others in the neighbourhood. They maintained a regular guard of villagers to protect themselves and the inhabitants. The guard kept up their marksmanship with rifle-practice and were paid partly by the mission and partly with voluntary gifts from the inhabitants. In the year 1926 Ho-chiao had been occupied by Marshal FENG YÜ-HSIANG's troops, who had plundered the village of eight hundred mules and horses and exacted a sum of three thousand Mexican dollars. The villagers' lives, however, had been spared. They alleged now that about a thousand bandits had their favourite quarters in the neighbourhood; the nearest were only eight kilometers from the mission-station. In the course of five years seven Belgian missionaries had been kidnapped. Two of these had been killed, one had died of wounds, while the rest had been released after the enrolling of the bandits in YEN HSI-SHAN's army. The red-yellow armband worn by the members of our escort was said to signify that these »soldiers» were enlisted in a robber-organization whose leader, WANG YING, lived in Pao-t'ou and controlled the whole countryside as far as Wu-yüan and Ho-chiao. This same WANG YING, as we later discovered, had enquired of the general in command in Pao-t'ou whether our expedition was really to be protected, or might be waylaid *en route*. The yellow-red robber-organization thus took its orders from the army leaders. Without having any suspicion of the fact, our expedition might easily have encountered far greater difficulties on its way to Mongolia than those we had to cope with in Peking.

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[1] Nao-pao, Chin. corruption of Mong. *obo*, a cairn. F. B.

[2] Belonging to the Sheiten-ula of the maps. F. B.

The station Ho-chiao was founded in 1905, and the Belgian Mission in North China in 1860. It belongs to La Congrégation des Scheut. In Alakshan there are no fewer than ten stations. The forty missionaries are distributed over five parishes, Ning-hsia, Kuei-hua, Ta-t'ung, Hsi-wan-tze near Kalgan and Sung-shu-tsui-tze near the city of Jehol. Ho-chiao's thousand inhabitants were all said to be Christians, and there are supposed to be a like number of converts in the surrounding villages.

The arrival of Chinese settlers in these parts had begun about sixty years previously, while the Mongols had retired to the north. Wherever irrigation was possible, opium was cultivated; districts that were less favoured by Nature were considered good enough for the cultivation of cereals. After a couple of months, when the harvest was in and the sheep had grown fat on the fresh pastures, it was more profitable to undertake plundering raids than now in the early summer.

We camped, on the night of the 24th, in a meadow near Bayan-buluk, not far from Ho-chiao. The altitude was nearly 1600 meters.

THE NORTHERN BOUNDARY FOR THE CHINESE SETTLEMENT

On May 25th we passed the northernmost tracts to which the Chinese settlers had pushed in this part of the country. Traces of the plough became sparser and sparser, and the Mongolian wilderness stretched out before us. The ground became gradually more rugged, and from the top of a little ridge the eye swept over a wide plain, bounded to the north by low hills. We were now in Mongolia proper, in the grass-lands! To the east a mirage caused the illusion of a great lake. Some cranes sat by the wayside. LARSON's sharp eye detected a running wolf, and although the distance was considerable he dropped on one knee and fired. The yellow-white wolf fell. When the distance was stepped out it was found to be 520 meters. A crack shot indeed. To the north, again, one saw the contours of the village Bura-deresun. We camped beside the Abugayin-gol, a stream now carrying very little water. We had reached the regions where antilope begin to enter as a feature in the landscape. The commonest species in eastern and central Inner Mongolia is *Procapra gutturosa.*

On the morning of May 26th we paid off and dismissed our robber-escort. It was with a feeling of relief that we watched these yellow-red riders disappearing to the south. We ourselves went on over pleasantly soft, rather broken ground, with low hills and ridges to either side. The first grass of early summer had begun to sprout, and gave a greenish, shimmering appearance to the country ahead.

ROUTE-MAPPING

All the way from Pao-t'ou I had drawn a route-map over the way we had come; and I intended to keep this up until we reached Sinkiang. I used the simplest possible instruments for mapping purposes, as I had done during my earlier journeys in the interior of Asia: compass, watch, pad and pencil. The compass gave the direction of our movements, and with every change of direction I took a fresh bearing. The number of minutes required for each bearing was noted down. The unit of measurement employed in this connection was the stride of my riding-camel. In Pao-t'ou we had measured out a base-line of a couple of hundred meters, and by riding backwards and forwards over this distance several times I had established a mean value for the camel's strides. In the same way I calculated the mean value for the number of minutes necessary to cover this distance. I could thus at any time check our speed by noting how many strides the camel took during the mean value of minutes I had already gained on the base-line. The mean value for the whole day's journey gave the distance. Simple as it is, this method, which I used for many years, gives quite a satisfactory result.

IV. CAMP KHUJIRTU-GOL

On May 27th we camped near the stream Khujirtu-gol,[1] moving our tents and baggage the following day only an hour's journey to the east along the same watercourse. This camping-place bore the number VIII and was chosen as our headquarters during the time necessary for LARSON's purchase of camels. The two hundred and thirty-two hired camels and their pullers had now completed their service and were allowed to turn back. The tents were put up in a long, straight line. LARSON insisted that we should follow the Mongol custom of always having the tent-flaps open to the south. He declared that we should be laughed at if we had the tent-openings in any other direction. But when we set up camp here such a hard south wind was blowing that he was the only one who persisted in having his tent open to the south. Apart from the wind, moreover, we were on the south bank of the Khujirtu-gol, and wanted an unobstructed view over the stream, though it was only a few meters wide. The water was clear and fresh, and full of small fish, frogs and algae. The banks were overgrown with grass.

On this camping-site we found ourselves in a flat valley, surrounded on all sides with round hills, to the south quite close. The valley opened to the north, widening to the great plains. A little hill on the yonder side of the stream was crowned by a black obo or votive cairn.

The caravan-route we were to follow to the west wound over the plains at a distance of a few kilometers to the north of the camp.

ARRIVAL OF OTHER MEMBERS OF THE EXPEDITION

On the afternoon of the same day that we arrived at the Khujirtu-gol LIEBERENZ and HASLUND also turned up. They had left the railway in Kalgan, thence travelling up through the border mountains of Mongolia to Khalun-usu to fetch ANDREWS's sixty-five camels. After that they had paid a visit to the ruler of Barun

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[1] In earlier descriptions this name has been written Hudjertu-gol, approximately corresponding to the Swedish pronunciation. HASLUND uses the form Hodjertai-gol in his book »Zajagan», Engl. ed. »Tents in Mongolia.» F. B.

Sunit. This distinguished Mongol prince had allowed them to film freely; and they availed themselves of the opportunity to add many interesting feet of film to the film-archive.

They were soon followed by NORIN, MARSCHALL, WALZ and SÖDERBOM, who arrived from Kuei-hua with various supplies on fifty-one camels. The original arrangement had been that we should meet the latter party at the great monastery of Beli-miao[1] (Batu-khalagh-sume); but since we were to set off westwards on striking camp, and were already forty kilometers to the west of the monastery, we sent word to them that they should come to us instead. Camp VIII thus turned out to be a great meeting-place for three different parties of the expedition on May 28th.

The new arrivals handed in reports of the tasks with which they had been commissioned. To give here a description of their experiences and journeys would take us too far.

THE CAMP

The staff now comprised eighteen Europeans and ten Chinese. This was the only time during the whole course of the expedition that all the members were assembled in one place, and it lasted only for a few days.

The twenty-one tents of our little community now stretched from west to east on the bank of the Khujirtu-gol. At the west end stood LARSON's tent, followed by mine, with the Swedish flag fluttering on a pole. My nearest neighbour to the east was Dr HUMMEL, who also had his own tent, as he needed room for his medicine-chests, his patients, his herbarium and his jars for collected fauna. As long as SÖDERBOM stayed in the main camp he was provisionally quartered with HUMMEL. The next tent was NORIN's and BERGMAN's, followed in a row by those of the German members. Of the latters', MÜHLENWEG's tent was remarkable for a regular battery of silver-filled chests; but when one has to buy many and costly camels no very high temperature is needed for silver to melt away with extraordinary rapidity. An adjacent tent was characterized by three or four stout tripods and stands for motion-picture apparatuses and ordinary cameras. Here were LIEBERENZ's quarters; his mission was to record the progress of the caravan through the deserts of Asia on plates and on twenty kilometers of film.

In the middle of the long tent-street rose the light green mess-tent, both taller

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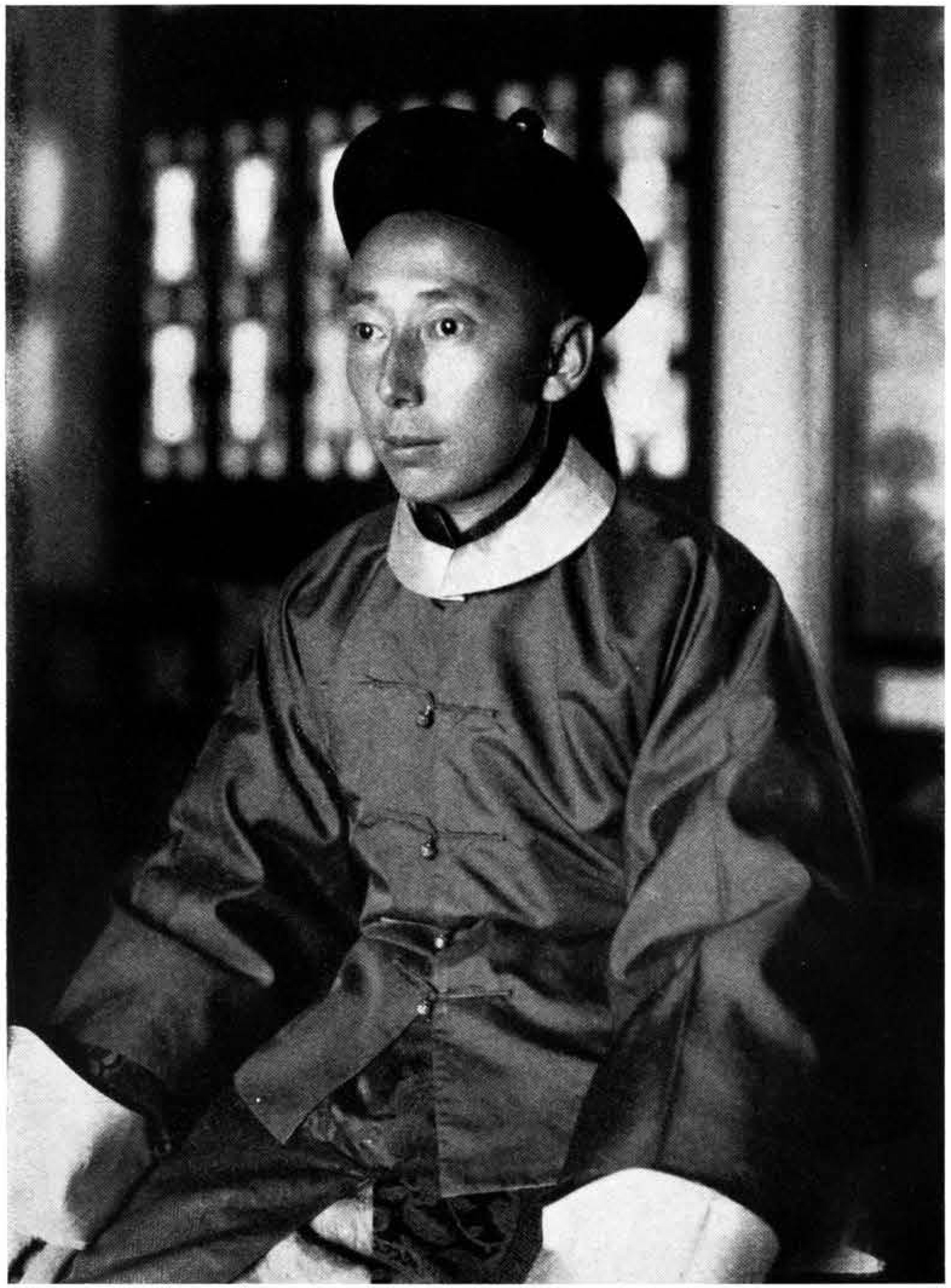
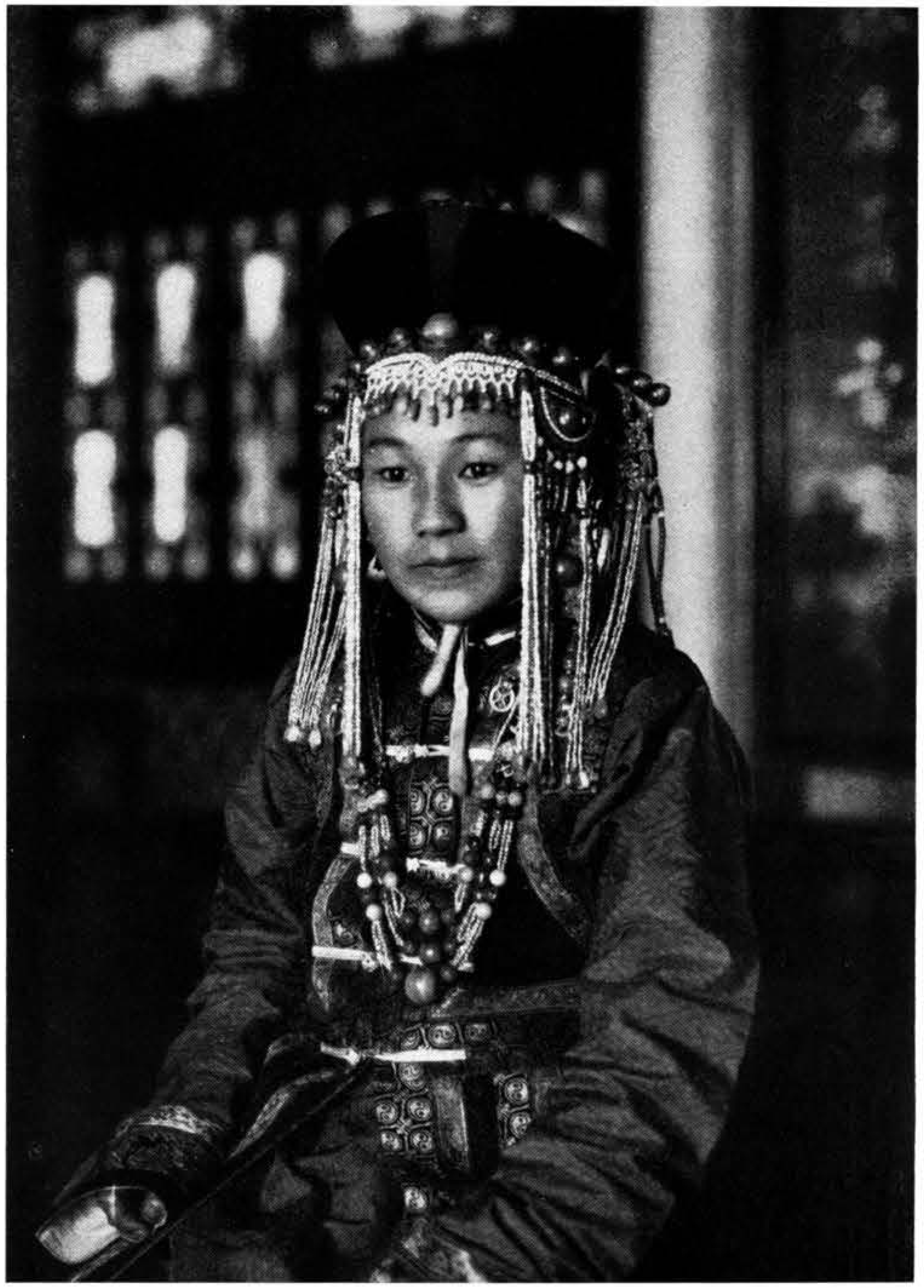
[1] Beli-miao is the strictly speaking incorrect form of this temple's name. It would be more correct to write Beile-miao, i. e. The Temple of the Prince (=Darkhan Beile). Our Mongols often said Beile-sume. The Chinese use the form Pai-ling-miao, The Temple of the Larks, but this is probably the popular etymology of Beile-miao, explicable in the light of the thousands of larks found in the region.

Batu-khalagh-sume, The Temple of the Strong Gate, is the name commonly used by the Mongols for the temple-town and is naturally the most correct form. It is frequently abbreviated to Batu-khalagh. F. B.



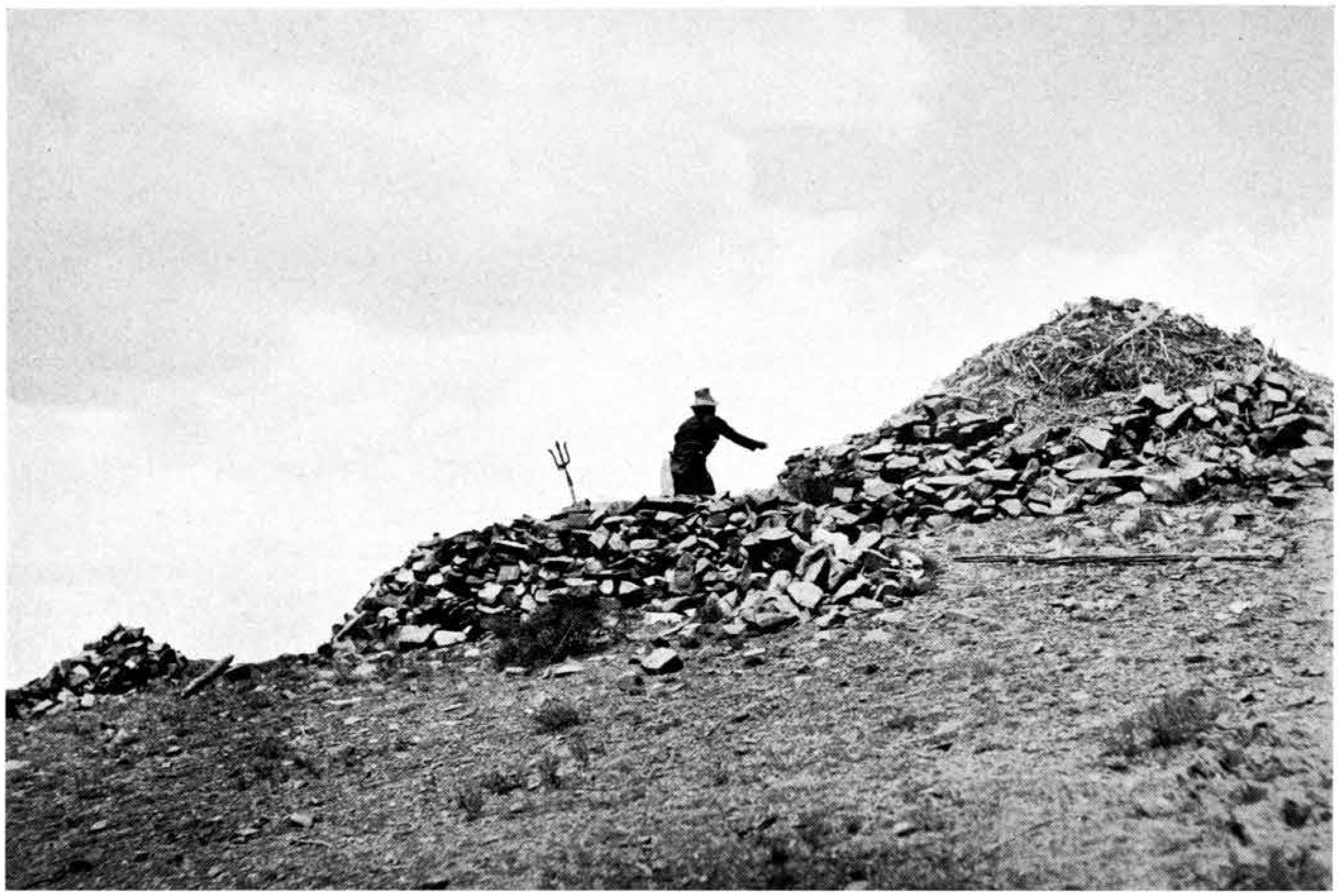
Lieberenz Photo

Barun Sunit Wang (Teh Wang) in 1927.

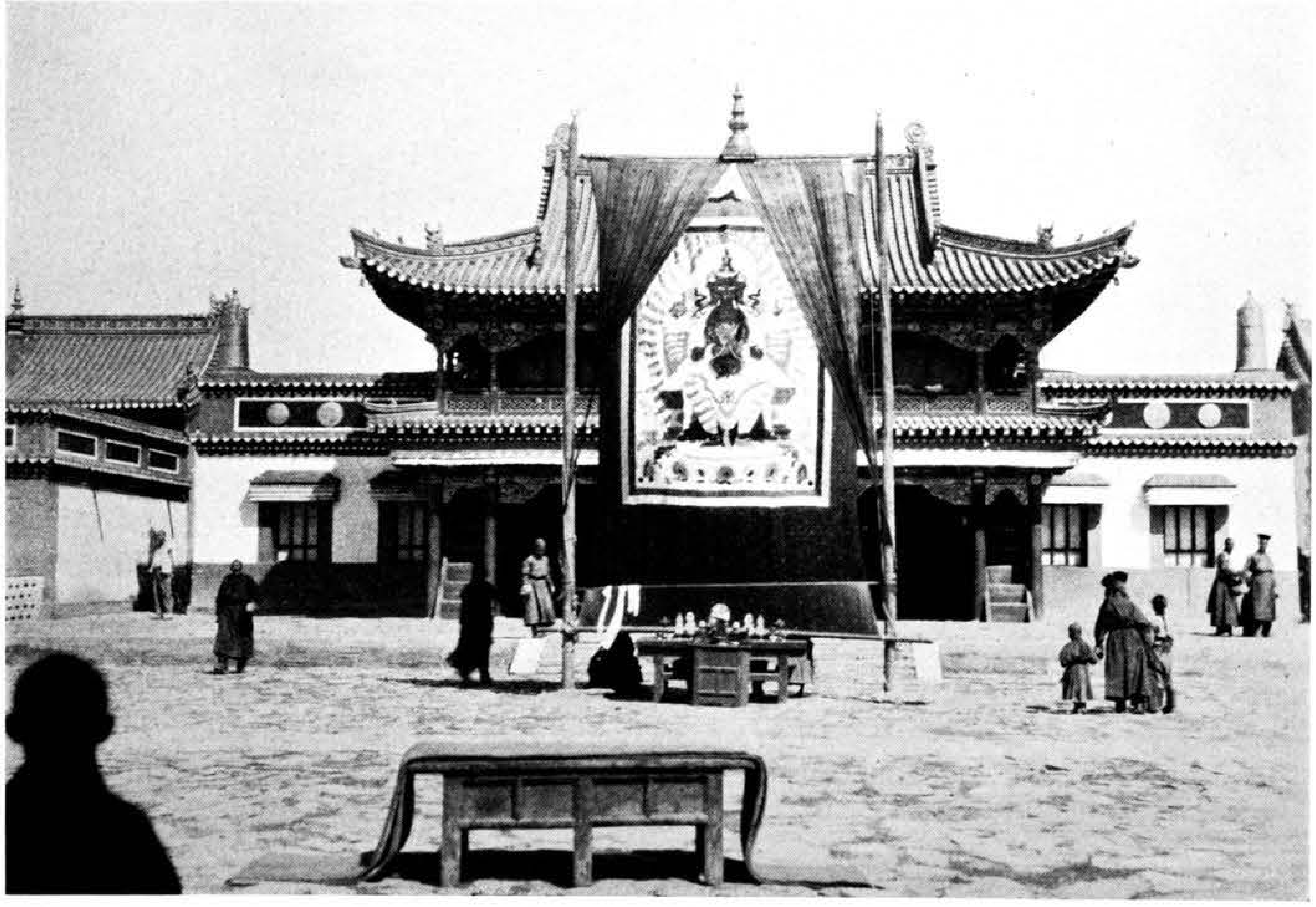


Lieberenz Photo

The consort of Barun Sunit Wang



A Mongol sacrificing at the obo on top of the Bayan-bogdo *Lieberenz Photo*



Lieberenz Photo

The huge painting with Maydar's image hung up in front of the main temple at Batu-khalagh-sume.

and larger than the others. Inside and at a long table out in the open all meals were taken: breakfast whenever desired, lunch at one o'clock, tea at five and supper at eight.

Nearest to the mess-tent was the kitchen and the tent of the Chinese boys, large and white — though the white was already beginning to turn into grey. And finally followed the Chinese quarter with ordinary blue tents. At the extreme end was the huge blue tent in which the Chinese students slept.

In the light of day the row of tents bore a certain resemblance to some of the blue mountain-chains of the Transhimalayas. The white ornaments that were sewn on the canvas in curious quirks and flourishes on either side of the tent-ridges reminded one of the eternally white-shimmering snow on the crests of the mountains. But they were not merely meaningless decorative patterns; they had a profound signification. On my own tent, which had richer ornamentations than the others, were sewn on the two lower corners of the long sides the ideogram *shou* (long life). In the middle of the canvas the same sign recurred in stylized form as a circle. Hovering around this with outspread wings fluttered five bats, *fu*, meaning »bliss». At the top, just under the tent-ridge, flew another bat with »bliss» under its wings, flanked on either side by stylized clouds.

Some of the tents were set up outside and to the south of the long tent-street. The first of these was that in which the pilot-balloons were filled; and this was also used in the evenings as a photographic dark-room. Then there were the Mongol tent and Dr HAUDE's tent — the latter filled and surrounded with all sorts of instrument-chests and boxes.

Outside HAUDE's tent stood on high wooden poles the cage containing the meteorological instruments, and fenced about as a holy of holies to keep over-curious Mongolian vagabonds at a distance. There, too, were planted the two metal masts, over ten meters in height, which bore the wireless antenna upon which we were dependent for the time-signals by which we were enabled to determine our longitudes — as long as our dry batteries held out.

Between the last-mentioned tents and the »street» were stacked the provision-chests and other baggage.

The camp was a splendid and impressive sight when viewed from one of the neighbouring hills to the south.

Near the kitchen-tent we had a real iron range with stove-pipe under the open sky. As long as we had SÖDERBOM with us in the main camp it was he who answered for the kitchen and the menu — a job which subsequently was taken over by KAULL. HUMMEL started by inspecting this section of the camp daily, coming down on the kitchen staff like a thousand of bricks if he found a tea-towel that was not quite clean, or a plate or cup not properly washed. But soon even the energetic doctor realized the hopelessness of such inspection, and it gradually lapsed of itself. And no-one was any the worse.

Outside the huge tent of the Mongols, which housed twenty-two men, a very handy little fire-place was dug. It consisted of three pits in a row, all having underground connections with one another. The pot was boiled over the middle-pit; the front-pit was used for firing with *argal* (dry manure); and the rear-pit served as a chimney.

In the evenings melodious songs from the Mongols' quarters drifted over to our tents.

LARSON was commissioned with the help of his friends the Mongols to make reconnoitring trips both near and far in Mongolia for the purpose of buying camels. LARSON had lived in Mongolia for thirty-five years, and he knew both the country and its people more thoroughly than any other European. He knew in what tracts camels could be procured; and he could bargain with the Mongols to get fair prices.

The gentlemen of the staff had at first to exercise their patience, though most of us had no particular need to be idle; and those upon whose hands time might otherwise have hung heavy contributed with hunting excursions to the resources of the kitchen.

The stage between Pao-t'ou and the Khujirtu-gol was the first during the eight years during which the main body of the expedition formed a single caravan. From the Khujirtu-gol onwards the expedition was divided up into several sections, which were not re-assembled until Urumchi was reached.

EXPEDITIONS TO BATU-KHALAGH-SUME

At ten o'clock on the 31st May NORIN and BERGMAN, together with SIU, TING, HUANG and KUNG, taking with them thirty camels, set out for Batu-khalagh-sume or Beli-miao, situated about forty kilometers to the east, intending in the neighbourhood of this great cloister to begin their field-work and to inspect the lamaistic monastery. NORIN had already begun a topographical chart of the tract, and he now intended to continue his mapping of the ground as far as the main camp. On arrival at Beli-miao they were to divide into two or three parties.

A day or so later another party set out for the monastery. It comprised HUMMEL, LIEBERENZ and HASLUND, who were to film, take anthropometric measurements and collect botanical and zoological specimens. In Beli-miao they met a *gegen* or »living god», who invited them to the great temple festival to the honour of Maydar in the middle of July.

MINGGHAN JASAK

We were encamped in the little district (hoshun or hoshio) of Inner Mongolia that goes under the name Mu-mingghan, or, as the Chinese call it, Mao-ming-an. The chief, or *jasak*, of this district lived about fifty li to our north. Soon after our arrival he sent an officer and three soldiers to our camp to enquire who we were and what our intentions might be. They had heard us shooting among the hills and were glad to see that we had killed three wolves. We were free to do as we pleased, but the chief's delegates requested us not to dig in the earth, as this might disturb the spirits of the soil. We were also asked especially to leave alone all eminences that were surmounted by an obo.

The following day I sent Major WALZ and Dr YUAN on a counter-visit. They found the chief to be a decent old Mongol, who plied them with questions and wanted to know all about us. He finally declared his intention of paying us a ceremonial visit in person.

A couple of days later he despatched an elderly official wearing large spectacles and a picturesque apparel of dark blue cloth. Our visitor was also decked out with heavy silver trappings and carried a rifle. He and his escort were invited to tea and cigarettes, and were afterwards filmed while I sat chatting with them in the opening of the mess-tent. The prince himself, however, never paid us the promised visit.

Mu-mingghan borders upon Darkhan Beile to the east and Jun Gung or the »Eastern Duke» of Urat to the west, all belonging to The Ulan Chap League.

WEATHER IN THE MIDDLE OF JUNE

Khujirtu-gol has an altitude of 1995 meters above sea-level and enjoys a highland climate. Although we were in the middle of June the temperature had not exceeded 27° Centigrade in the shade; and we were astonished when the minimum temperature one night sank as low as one degree above zero. A couple of nights later we had frost (—2° C.). But in calm weather the temperature in the tents was as much as 38° C., and out in the open one felt the burning effect of the sun's rays. With the possible exception of a couple of the Chinese who used the large, elegant, red parasols of their country, we were all, yellow and white alike, swarthy with sun-tan. The climate was quite ideal, with its dry mountain-air. It was like a highland sanatorium, where one feels that one could not possibly be in better health whatever one does. Only between 11 and 5 o'clock during the day could one speak of a perceptible warmth; but one never felt it as trying in any way. As soon as the sun had set, however, it became cold. The direct rays of the sun, that at denser and lower atmospheric levels are largely absorbed, struck one at this altitude with much greater force. But there was an almost perpetual wind blowing from all points of the compass. We had already had winds of over twenty second-meters' velocity; and with these continual fresh and cooling air-currents one certainly had no cause to complain of the heat.

One day, when everything was dead calm, my boy MING came and poured water from the brook around my tent, and the effect was beautifully cooling. But I myself have nothing against heat; I have frozen enough in my day. I was half afraid, however, that we might have a little too much of it when we pushed further into the interior and came to lower altitudes.

REDUCTION OF THE BAGGAGE

A subject for endless discussions was the question as to whether our forty tons of baggage might not in some way be reduced, to make the loads fewer and lighter. LARSON and I, who had had Spartan habits for decades in Asia, wanted to throw overboard everything that had any appearance of luxury. We wanted to burn the chairs and tables from the mess-tent, either in a huge midsummer bonfire or piece by piece in the kitchen-range. We who slept on the ground felt a rising contempt for the softer members who still used beds; and we insisted that these should be given away. We were, in short, animated with a blind lust to destroy everything that might possibly be done without and that we considered it unnecessary to haul along with us through Mongolia — every morning loading it on to the camels and every evening unloading it again. The camp-beds were, accordingly, later given to the Belgian priests in Ho-chiao, who could put them to use in their sick-room. I have always felt a certain satisfaction in sleeping on the ground — I loved to feel myself in intimate contact with the soil of Asia — to feel that I could at any time caress it by simply stretching out a hand.

PURCHASE OF CAMELS

In connection with the slow business of camel-purchasing LARSON and his Mongols made use of all sorts of camel-sharpers and middle-men who had interests or influence with rich Mongols right up to Outer Mongolia. Some of these latter owned herds of as many as a thousand animals.

One day a couple of our own Mongols came back to tell us that they had bought a hundred first-rate camels for $100 apiece. But it was first necessary to hand over the silver to the various owners before they would part with their beasts — times were bad, and one never knew what kind of folk one might chance to be dealing with.

We were thus compelled to count out 10,000 silver dollars (at least 18,000 Swedish crowns) and hand over this amount to our representatives before we had had so much as a glimpse of any camels.

The heaps of silver were stacked up on the mess-table in long rows, one thousand after the other. Meanwhile, the weather-beaten Mongols stood there waiting, afterwards checking up and stuffing the silver into sacks that in their turn were packed into wooden boxes. The next morning our Mongols set off under the escort of MASSENBACH and MÜHLENWEG to the camel-owners.

On June 16th the first lot of camels were led into the camp. They were large, plump and handsome beasts, and it was a particular pleasure for me to inspect them under LARSON's guidance. Their humps were fat yet firm, conical and erect. They had already moulted most of their winter wool, and therefore looked naked.

If we had been satisfied with mediocre camels our caravan would have been ready to start long since; but I was determined to have only first-class animals, that would not only be able to stand up to the 2,100 kilometers to Urumchi but that we could also use later on for new marches. LARSON had made it a point of pride that our caravan should be the finest to set out for the interior within living memory.

STORM

On the 19th June I was awakened by a strong and rising wind, and after lunch the leaden clouds that had come driving from the west began to unburden themselves. The first downfall was whipped over the camp by a raging storm. We called up every Mongol we had to hammer in the tent-pegs harder, to resist the terrific pressure of the wind. We expected the taut-drawn canvas to give way any moment; but these Mongolian tents are ingeniously constructed, with a functionalistic stream-line form. The rain lashed against the canvas with such violence that a fine mist came seeping through. Everything that was not under cover became wet, so I draped rugs over my books, maps and piles of newly washed underclothes. After a while this heavy rainfall turned into a fusillade of hail-stones, and this, together with the thunder that pealed and rumbled overhead, gave one a vivid impression of being exposed to a violent bombardment.

The velocity of the wind rose to seventeen second-meters, and the temperature sank rapidly from 25° to 15.7° Centigrade.

On the 21st June NORIN and BERGMAN returned from their three weeks' tour to Beli-miao. They had worked around the temple and in the tract lying between the latter and our camp. NORIN had made a plane-table map of the ground they had covered to a scale of 1: 50,000, and had studied the geology of this region. BERGMAN had come across three prehistoric sites from which he brought flint objects that had been worked upon by man.

RAIN

Early in the afternoon of June 21st it began to rain, and continued without interruption the whole night. When we awoke next day a storm was raging and it was piercingly cold. The sky was overcast and dark, but it had stopped raining.

There was a roaring wind, however — as usual, from the west. At the camp the velocity of the wind rose to seventeen second-meters, but on a nearby hillock it was as much as twenty-eight meters per second. The maximum temperature was a little over 13° Centigrade, and strange as it may seem, we certainly felt the cold now more keenly than ever we did in the winter. Shortly before the sun went down in a sea of flaming gold the wind suddenly fell; it became dead calm, and the stars began to appear. Chilled and shivering, we crept out of our lairs, where we had sat writing till the storm should show signs of abating.

The rainy period does not generally begin before July 10th, as LARSON had assured us. According to HAUDE, however, the storm we had experienced was nevertheless to be regarded as the first clear visitation of the monsoon.

Many of our newly purchased camels had moulted all their wool. They had to spend the night together and covered with felts and canvas sheets. Such an arrangement is, however, rather risky in a strong wind unless the camels are accustomed to it. If the wind gets under a camel-felt and starts fluttering it and slapping the animals may take fright and bolt. Two of our Mongols had therefore to keep watch over the camels all night in a cold drizzle.

ANXIETY FOR THE CAMEL BUYERS

Meantime, the days slipped by with astonishing rapidity. There was no tedium in the camp — all had work to do, and something new happened every day. We made plans for the future and were kept in a continual state of tension and suspense, waiting for camels from the north-east. It is no light matter to send a party of Mongols out into the unknown with ten thousand dollars in silver, and we could not help feeling certain misgivings when day followed day without our hearing anything of them.

We were all well enough aware of the restlessness of the times. At midsummer I had a letter from Father DIELTIENS in Ho-chiao, saying that in the district to the east of the Belgian mission-station there had been a regular battle between two thousand »Red Spears» and a thousand bandits. The latter had been victorious, and had slain twenty-two of their opponents. The Red Spears were rallying to take revenge, and the scene of hostilities moved eastwards.

SUNDAY ENTERTAINMENT

On June 26th we had a regular fête Sunday in the 'town of the four nations'. A curious Chinese company had arrived in the camp: four or five fellows with three women and half-a-dozen dirty youngsters. They declared that they were a travelling theatrical company, and that they had come to show us a sample of their art. Some of our members opined that they were spies from some bandit gang; and if this was the case they were indeed *real* actors. For why should a troop of travelling players come trapesing to these out-of-the-way parts of Mongolia when they had the whole of China at their disposal? But perhaps competition is so keen that it is worth while entertaining the Chinese settlers and Mongols on the borders. Such adventurers have nothing to fear from bandits — it would not be worth the trouble of robbing them, and presumably even bandits need a little entertainment now and again.

The troop made itself at home quite near our servants' tent, and after having been served food and tea the ladies began waging sanguinary warfare on one another's vermin. The doctor considered that this honourable occupation ought to be carried out at a safe distance, as otherwise we should be exposed to possibly typhus-carrying lice. I therefore asked YUAN to request the company to remove to the yonder side of the brook so that the vermin could not reach our tents without getting wet feet.

In the centre of the space in front of 'MARCO POLO Street' — as the *corso* before the tents was called — the actors arranged their open-air stage. An empty packing-case was set up and the 'orchestra' sat down on a couple of chairs. It consisted of a fellow who played the flute and another who thrummed on a melodious stringed instrument.

Now the actors made their appearance. Both were men, but one of them played a woman's rôle. The latter's face was naturally feminine, and he wore a woman's wig and the kind of ornaments that Chinese women commonly wear. The man had painted himself chalk-white about the eyes and had long black moustachios. They knew their parts. Singing, whining and yelling, they poured out a flood of incomprehensible words, while the music provided a lusty accompaniment. I asked SIU and YUAN if they were able to follow, but they replied that they could only catch a word here and there. But it was obviously a love intrigue.

Our actors hopped and danced around each other the whole time, striking each other's foreheads with fans — the most resounding blows! — all the while keeping up a rhythmic creaking noise with long rattles of hard wood. They performed acrobatic feats, crept together like cats, grimaced and uttered regular Indian war-cries. Doubtless they cracked the most frivolous jokes, but their movements were not in any way indecent, their pantomime was uproariously funny, and the Chinese part of the audience were vastly entertained.

When the play was at an end and both actors and musicians had been duly paid, they went their way and the audience broke up. We had at all events had a little popular entertainment in our tent community.

On the same day Dr HAUDE read 32.2° Centigrade, the highest temperature we had thitherto registered at our head-quarters. The minimum that night was 14.8°, the atmosphere was uncommonly balmy and seemed to encourage a sort of little brown beetle. I counted over six hundred around my lamp. They swarmed in dense battalions, rushing backwards and forwards over the paper while I wrote. When the temperature was only a couple of degrees above zero these little pests stayed at home, and I was able to write my notes and letters in peace.

ARRIVAL OF FORTY-TWO CAMELS

Just as we sat down to lunch on the 28th one of our Mongols came in and announced to LARSON that a herd of camels was approaching. We hastened out with field-glasses. Two of the Mongols we had sent out to the north-east, themselves riding upon camels, were driving the herd in the direction of the camp. They drew rapidly nearer over the steppe. When the animals were quite close they shyed at the tents and bolted off in a wide arc to the north, veiled in clouds of whirling dust. The riders soon had them in hand again, however, and they once more approached the stream. They came splashing over, and LARSON and I went up to inspect them. The forty-two newcomers were fat and in good condition. We now had nearly two hundred camels in camp. We had paid for a further forty, and expected their arrival at any moment.

ANIMAL LIFE IN AND OUT OF CAMP

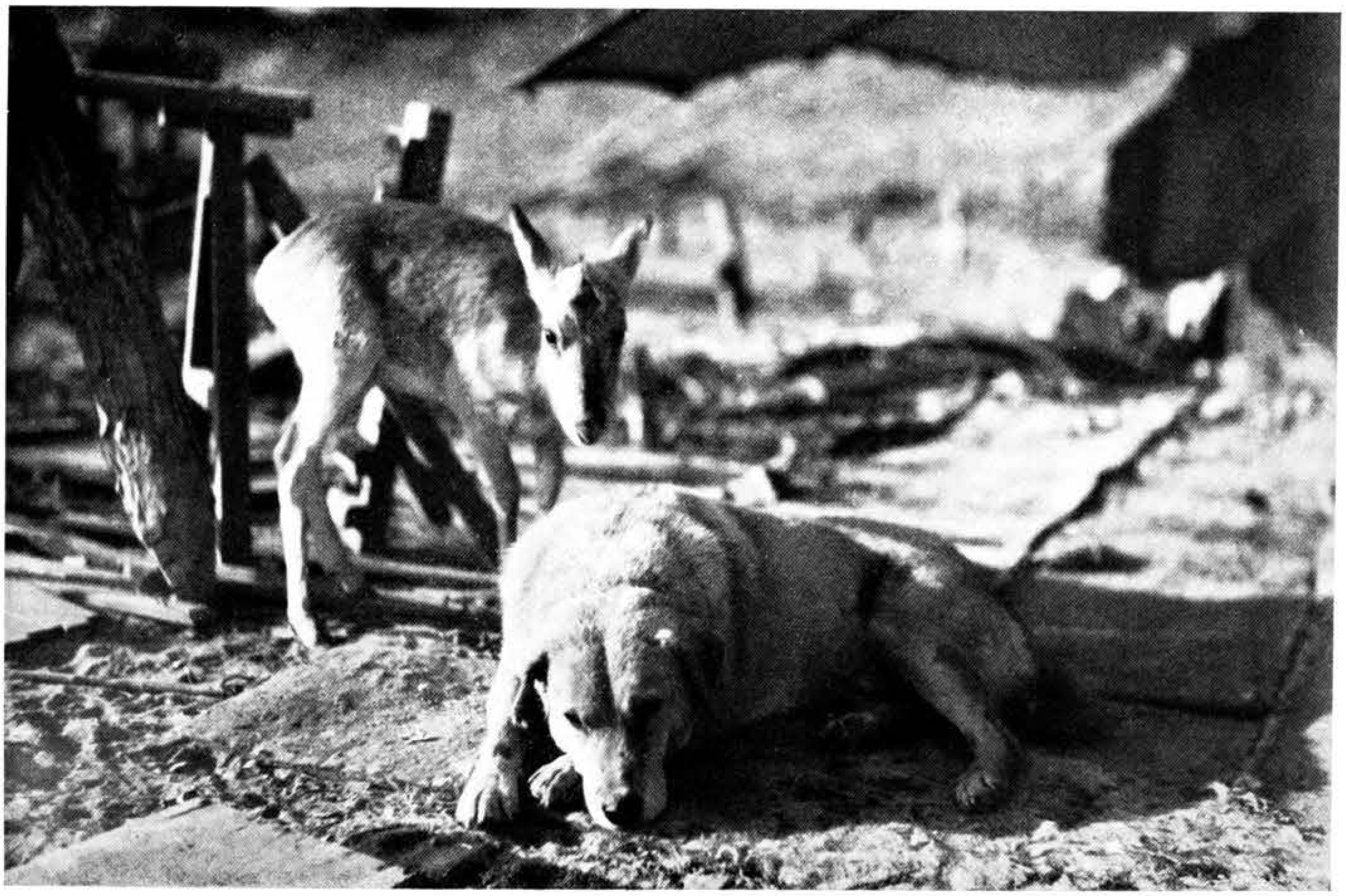
We had acquired a yellowish dog from the nearest Chinese village, a few kilometers to the south-west. He was christened Hami, for he had once visited this distant town with a Chinese caravan. He was a plucky dog. One evening I heard his hoarse bark retreating from my tent and finally dying away in the distance. The next morning I heard that three wolves had been skulking about the tent of the Chinese. The night-guard had hastened up, to see Hami chasing away the wolves and pursuing them to the hills in the east. Another night, too, he kept wolves at a distance from our tethered sheep.

We had ordered four sheep from the nearest Mongol camp. An old Mongol brought them over, and he was all of a dither when he arrived. A large, ravenous wolf had followed him and the sheep nearly all the way, and he had no weapon, not even a stick.

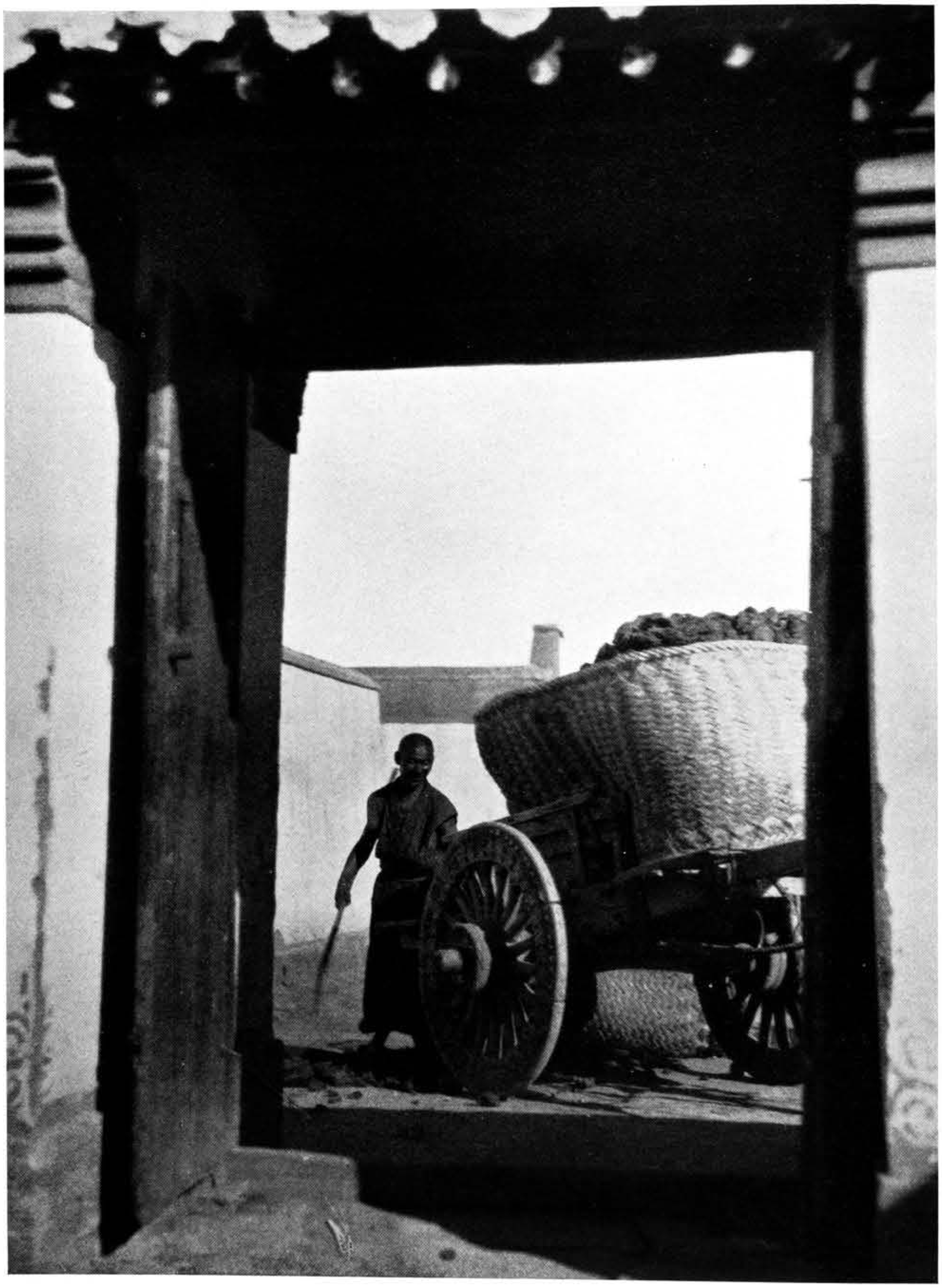
One night a mare in the vicinity was overpowered by wolves, and they had not left much more than the skeleton behind. Their chief prey, however, are the antelopes: but these animals are on their guard, and their fleetness is their best safety. When grazing they always have their noses in the wind.

Wolves are seldom dangerous for man in these parts; their hunting-grounds are too well stocked with easier prey.

Mongolian ponies cooling off in the Khujirtu-gol *Lieberenz Photo*



Hami and the young antelope Dicky *Lieberenz Photo*



Lieberenz Photo

Cart with fuel (dry cattle-dung) for the lamas at Batu-khalagh-sume

A couple of Chinese came to offer us a young antelope about eight days old (they are born around the 1st July). They asked five dollars for the little creature. Although LARSON warned us that we should be swamped with offers of young antelopes from all points of the compass if we bought this one we decided to take the risk. We fed the little fellow on luke-warm milk and petted him in every way. He lay on a felt bed outside my tent, and I was at a loss to know what to do with him. If I had known where his mother was I should have given him back to her; but the steppe was vast and the antelopes as swift as cloud-shadows over the surface of the plain.

Large numbers of young antelopes fall an easy prey to wolves at this time of the year. It is strange that the newly born animals can follow the older ones on their flights such a short time after birth as it seems they are able to do. The region around our camp was simply swarming with short-tailed, steppe-antelopes. They often came quite near — frequently to their cost, especially if Major HEYDER was at home, for he was continually picking off some of these beautiful and noble animals. For quite a long time we had antelope flesh for every meal, till we got tired of it. Finally we had bought some sheep of the Mongols, and these now gave the camp something of a farmyard air — an impression that was strengthened by the acquisition of some hens, that went cackling about between the loads and the tents.

Our Mongols had a special name for antelopes: they called them »LARSON's sheep» because LARSON picked them off so easily with a rifle.

Our little antelope soon grew quite tame, and proved to be an amusing and charming pet. He was given his milk in a bottle with a rubber nipple. He sucked and struggled and frisked so that it was quite a job to hold him. We had recently added a Mongolian goat to our livestock; and our little waif discovered the fact for himself. Soon one might see him kneeling down and sucking away for dear life. He grew visibly from day to day and was christened »Dicky». At the narrowest part of the stream, where we could cross in one long stride, he would go leaping back and forth from bank to bank with such elegance that it was a delight to see.

Dicky was light brown, had a white belly and chest, a stumpy little tail that wagged rapidly and often, a narrow and nobly formed neck and a head that one was never weary of contemplating. The delicate little nose was in perpetual movement, especially when he was hungry, and he was always that. The ears were long and narrow, and the eyes large, brown, friendly and beautiful.

We also had an eagle that was quite tame. It had evidently lost a couple of quills from its wings, and therefore flew badly. When night fell with its shadows the eagle perched on the top of MARSCHALL's tent; MARSCHALL was a great lover of animals. After a time one could see white streaks running down the dark blue sides of the tent from the ridge of the roof. Together with the previous ornamentation of white quirks and flourishes the effect was by no means unhappy.

Our menagerie, actually consisting of camels, dogs, hens and a few hired horses, numbered also an elegant and noble little jerboa that HUMMEL kept in a large empty box, and that he had almost succeeded in taming. On the bottom of the box was an open cage, lined with wadding. Here the jerboa made its bed every day. It was the prettiest and most graceful little animal when on its relatively large and strongly developed back legs it sat up to convey dandelion leaves to its mouth with two tiny little fore-paws. It was greyish brown and had very large, thin ears and enormous brown eyes. Being a night animal it became frisky and lively as soon as the sun went down. When at liberty the jerboa propels itself in the same way as does the kangaroo, using only its hind-legs, keeping its body almost erect. The tail, which is both long and sturdy and ends with a white tuft of hair provided with a black transverse band, is then also used as a support. The little creature showed not the slightest sign of fear and was intensely interested in everything. But its menu was peculiar, and not restricted to vegetables. The doctor once got the idea that it might need company, and he put a frog from the brook in its water-bowl. The next morning the frog's head was all that was left. Another episode that made the jerboa unpopular in the camp was its heartless devouring of the two delicate and helpless babies to which it gave birth in its nest of wadding. On a later occasion we caught another jerboa, also a female, and introduced it to the old one. It was killed the very first night by our cruel pet. As a punishment for its murderous instincts it was now also despatched and added to HUMMEL's zoological collections.

A very vocal part of the animal-life in our immediate vicinity were the frogs. During the first few weeks of our stay here they filled the nights with their croaking love serenades. After a time, however, they grew silent, but swam about near the banks of the brook none the less merrily for that. They had a deplorable habit of hopping into our tents after rain and when the lamps had been lit.

We were also not without bird-life. Cranes seemed fond of the site, and were often to be seen on the banks of the stream at some little distance from the camp. Various kinds of birds of prey, kites and eagles, hung about the camp and swooped down like arrows upon the entrails of antelope or sheep. A little lark had its nest at the foot of the nearest hill. The doctor added her egg to his collection; but she laid another. Presently it was hatched out; and when one crouched down near the nest the youngster gaped with his little red gullet and piped. We visited the nest at least once a day to persuade ourselves that the baby bird had come to no harm and to watch it growing in body and soul.

Scarcely a day went by without our seeing a herd of antelopes in the vicinity. One day Dr Haude and a couple of the others went bathing in the broadest part of the brook. After the bathe they lay down in the grass, as usual, to bask in the sun. A herd of antelopes approached. They were remarkably inquisitive and fearless; they must have sensed that the men were unarmed. A buck bounded up and sniffed the air, while some lusty little kids gambolled up to within four yards of the men.

NORIN'S TOPOGRAPHICAL WORK

Norin now planned a more thorough mapping of the route to the Edsen-gol than we had at first intended. Our original plan had been to make the simple map of our actual marching route that I was of old in the habit of making myself, while Norin and Yuan were to map certain tracts in addition, according as they found time, and depending on the geological or archaeological importance of the tracts in question. If this plan had been followed, the map of our route would on the whole have been little more than a line, with here and there slight extensions to either side.

Now, however, Norin wished to triangulate the whole route to the Edsen-gol. We should thus have a continuous system of triangles, the angles of which would be measured with the theodolite. The sides of these triangles would measure between ten and fifteen kilometers. The main axis of the whole system of triangles would follow the caravan-route. The work of measuring the triangles was entrusted to Major Heyder.

Norin, meanwhile, was to fill in the region inside the triangle system with topographical detail, taking his bearings from the fixed points. Massenbach was to assist him in this by charting the courses of streams and valleys by pacing. Both Heyder and Massenbach had some topographical training as officers.

As usual, we conferred with our Chinese colleagues on the subject of this mapping project, and were met with the greatest sympathy and interest. Norin was now obliged to travel with his own little caravan, independently of the main force. While this column of Norin's was to keep about twenty kilometers to the north of the main caravan, the Chinese suggested setting up a topographical party of their own, which would travel southwards of the main caravan at a distance of about ten kilometers.

In this way we moved in three more or less parallel columns, the north party being under Norin's command, while the middle and south columns were led by myself and Yuan respectively.

DEPARTURE OF THE DETACHED COLUMNS

The north column left on July 1st. Besides NORIN, it consisted of BERGMAN, who was to concentrate on archaeology, Major HEYDER, v. MASSENBACH, TING, the palaeontologist, CHIN, the digger, a cook, two coolies, two Mongols and twenty-five camels.

This party had the hardest work, for angle-measurement requires the most scrupulous accuracy.

YUAN's column set off on July 3rd, taking HUANG, the archaeologist, CHAN, the topographer, CHUANG and PAI, both diggers, a cook, two coolies, two Mongols and fifteen camels. The mapping work carried out by this party was also to proceed from HEYDER's fix-points.

Both columns were to keep in constant touch with us through Mongol messengers. Water and pasture were as usual the two factors that determined our camping-sites. In other respects we were independent of one another. We agreed, however, that all three columns should meet half-way to the Edsen-gol, at the great Lama monastery Shandai-sume (Shande-miao).

KAULL's, HASLUND's AND SÖDERBOM's JOURNEY TO PEKING

On June 6th we sent HASLUND and SÖDERBOM to Pao-t'ou and Kuei-hua respectively, while KAULL was despatched at the same time to Peking and Tientsin. They were to fetch $9,000 in silver, our post, and carry out a host of small commissions — such as, for instance, taking in a box chronometer that refused to function for repair. In Tientsin, too, several purchases had to be made to supplement our wireless and instrumental equipment. The travellers were to be back by June 25th, but we heard nothing from them either then or for the next few days. When five and then six days had passed we began to feel uneasy, and the missing three became the general topic of conversation in the camp. Finally, LARSON proposed that two of our best Mongols should be sent to Kuei-hua with a letter to the Belgian physician, Dr KAISIN, asking whether and when our missing members had left the town, and, if they had not yet left, what was the reason for the delay. A well-mounted Mongol should be able to reach Kuei-hua in three days, perform his errand and rest for a night before returning in three days again.

On July 4th, then, we sent off two Mongols to Kuei-hua on horse-back. One of them, SARAN GEREL (Moonbeam), was to hand over my letter to Dr KAISIN; the other, TSERAT (Morning Star)[1] was to proceed from Kuei-hua to Peking with a letter to one of my friends, asking him to try and procure a theodolite, either in Peking or Tientsin, for we had only one left since a violent gust of wind had upset and damaged the one we had in reserve. TSERAT was given twenty days to be back.

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[1] In previous publications the name has been spelt SERAT (by HASLUND: TSEREAT). According to kind information from Dr K. GRØNBECH its proper spelling ought to be TSERUT. F. B.

On the evening of July 9th LARSON, generally so cool and collected, rushed up to me waving his arms. He shrieked: »They're coming! The whole caravan is coming!» And sure enough, all three of our truants made their appearance. Uproar in the camp, and the three travellers became the heroes of the day.

They reported that they had carried out all their commissions without being exposed to any dangerous adventures, though their journey had not been without excitement.

They had reached Kuei-hua, a distance of two hundred and thirty kilometers, after five days' travelling. When late on the evening of June 11th they had entered the City they had noticed people sitting in the lighted-up shops, all busily employed in sewing flags — the white sun with twelve tongues on a blue ground: the flag of Kuomintang. Early on the morning of June 12th these flags had been hoisted on all the houses. The same ceremony was taking place, so they were told, in Sarachi and Pao-t'ou. On the morning of that day Sui-yüan's *tu-t'ung*, SHANG CHEN, held a great reception, including a procession past SUN YAT-SEN's portrait.

The Chinese took possession of the premises of the International Export Co., stole everything but the fixtures, hoisted the southern flag and set up their head-quarters there. The same treatment was accorded the premises of the Salvation Army and the chapel of the Swedish Mission. These buildings were to be used as propaganda centres for SUN YAT-SEN's »Three Principles». Sixty or seventy agitators had arrived from Canton and more were expected.

There was talk of troop movements in the neighbourhood. Kuei-hua's *tu-t'ung* was said to have sent a force to the region north of Kalgan and to have concentrated other troops between Ta-t'ung and Kalgan. The Mukden soldiers who had been quartered in P'ing-ti-ch'üan had withdrawn, on the approach of the Shansi troops, to Chakhar and Kalgan. A large army of Shansi soldiers had now been concentrated at a little station on the border between Shansi and Chihli. Mukden troops were assembled a couple of stations to the east of this place and in the surrounding country. Two Kirin divisions were on the way to Kalgan to fight the troops of YEN HSI-SHAN, the governor of Shansi. The latter had now gone over to Kuomintang and allied himself with CHIANG KAI-SHEK and FENG YÜ-HSIANG.

On the 13th KAULL left Kuei-hua for Peking and Tientsin. He found the latter town transformed into a military camp. There were swarms of American, English, French and Italian troops. The Japanese had occupied the railway between Shan-hai-kuan and Chang-chun, and it was thought that the English were going to occupy the Tientsin-Peking railway. Things looked black for the whites. The position was so dangerous that SÖDERBOM and HASLUND decided, when they had finished their business in Kuei-hua and Pao-t'ou, to journey down to Peking in order not to be cut off in the event of war breaking out on the frontier between Shansi and Chihli. In Peking they rejoined KAULL, and if war broke out the three emissaries intended to make their way up to Kalgan and thence to the camp.

Things were still quiet in Peking; but there were so many foreign soldiers there that the city was out of beer, and in some streets one was stopped and questioned by the police.

On the 21st, however, they journeyed up to Kuei-hua again, leaving that town for camp on July 2nd. And now we had them safe home again.

A few days later SÖDERBOM was sent off to NORIN's column to serve as caravan leader, an office that he performed all the way to the Edsen-gol.

MAYDAR's FESTIVAL IN BATU-KHALAGH-SUME

On July 16th HUMMEL, HASLUND and LIEBERENZ returned from their second visit to Beli-miao. HUMMEL gave us a graphic account of their experiences in this great lamasery.

The sixteenth day of the sixth month of this year of the Hare is marked by the celebration of Maydar's (Maytreya's) festival. This lasts for three days, which fell, this year, on the 13th, 14th and 15th of July.

The abbot of Batu-khalagh-sume (Beli-miao) was called CHIRIN LAMA. There was also a *gegen* or incarnation by the name of JOLROS LAMA. This worthy received his European guests with the greatest hospitality, and they stayed at his house within the temple grounds. The young prince DUMURO NAMCHIL was also a guest with the *gegen* at the same time. The chief of the district, DARKHAN BEILE, was of course also present at the festival; and the first thing our travellers did on their arrival was to pay a visit to this worthy.

The temple had been pillaged and burned by Chinese soldiers in 1913; but in the course of a decade it had been rebuilt with funds provided for the purpose by the then president, YUAN SHIH-K'AI. The new dwellings of the gods were designed partly in Chinese style, partly in Tibetan, and the wooden material used was from the sacred forests around Urga. There were libraries with weighty, holy books on solid shelves, colonnades, courtyards and balconies.

In October 1926 the monastery was attacked by about a thousand bandits and rebellious soldiers. Just at that time, however, sixty of Marshal FENG's Red Russian Cossacks were stationed at the monastery, and they defended the pass near the lamasery with such bravery that numbers of the storming rabble were shot down and the rest took to their heels. The Russians were afterwards celebrated as heroes in the monastery — sheep were slaughtered and they were feasted royally. The lamas thus did what they could to show their gratitude, when the foreigners had saved the sanctuary by their brave defence.

The first day of the Maydar festival had begun with a reception by JOLROS LAMA, who sat enthroned in state and dispensed blessings to the innumerable pilgrims. All had brought gifts for him. He gave his blessing by touching the pilgrims' heads with a yellow book. Among others came also the seven-year old KHAMPO LAMA, whom JOLROS LAMA lifted up beside himself, making much of him and talking to him the while. This was an unforgettable scene, for both were uncommonly noble and distinguished types.

In the gate-house at the entry to the courtyard sat the band, with enormous trumpets, drums and cymbals. The more exalted personages sat along the walls and on the balconies, while the women sat opposite them on cushions. Two yellow lamas in masks now appeared on the stage, dancing and capering. They wore fringed skirts and were followed by a merry, almost clown-like figure called Tsaghan Obogen or »The White Old Man». The latter was regarded as the father of the yellow maskers. A parchment was unrolled and a reading of Maydar's doctrines given. Maydar is the coming Buddha or Messiah. A procession of high lamas in yellow hats now entered. They took their places in the courtyard, bringing sacrifices with them. Closely followed by the band they formed a procession. The Grand Lama, walking under a canopy, also took part in this. Behind him a number of soldiers bore an image of Maydar sitting in a kind of open sedan-chair, while others bore pictures of his disciples. Bringing up in the rear were a crowd of maskers. The procession made its stately way out of the monastery precincts and into the open. Here tea and refreshments were taken, followed by a tour round the sacred edifices. At each side, standing for a point of the compass, the procession halted for a short rest. On the completion of this tour the monastery was re-entered and prayers were offered up in the presence of crowds of pilgrims and all the distinguished guests.

The culmination of the festival was reached on July 14th. At 10 o'clock in the morning, to the accompaniment of trumpets and tinkling bells, the deep summoning blasts of the conch horn were heard on the temple-roof. All the believers trooped to their places in the courtyard, all according to rank and dignity, and the devil-dance began. In came the lamas, two by two, wearing masks representing skeleton-men, deer, wild beasts — just as they do in Tibet. They danced and cavorted, all the time to the accompaniment of the music. Some of the dancers were even seen on one of the balconies. LIEBERENZ was so squeezed and buffeted by the crowds of onlookers, all eager to have a sight of the spectacle, that he took refuge at the base of a low pillar, where he had a little elbow-room with his film-camera. The following curious rite formed an important part of the proceedings: the Lamas brought forward a large, triangular paper, which they bore over the heads of the crowd. This paper drew to itself all evil and sin. All now trooped out into the open, and formed a half circle on the plain. A fire was lighted and the triangle cast into the flames, being consumed with all its darkness and evil.

Another queer feature of the ceremonies was the behaviour of two possessed men. A couple of lamas inspired them with evil spirits, and they really did seem to be possessed. Their faces swelled up and became red, their eyes seemed starting from their heads, they frothed at the mouth and were seized with a sort of hysterical intoxication or uncontrolled religious ecstasy. They became downright dangerous. Our people had been warned not to go too close to them, for they were armed with lances and swords, with which they went windmilling and blindly thrusting about in all directions. And they shot with bow and arrow — not only up in the air, but also horizontally, so that they might have hit and wounded anybody at all who happened to be out of luck. On one occasion they threw stones at LIEBERENZ as he stood filming from a roof.

July 15th was celebrated with new dances, plays, humoristic pranks, performances by magicians in high hats. Sacred books were displayed for the homage of the crowd, who smothered them with *khadaks* — long, thin, narrow cloths, regarded as holy gifts and sacrifices and good wishes. Even little children were taken up to the books and held over them.

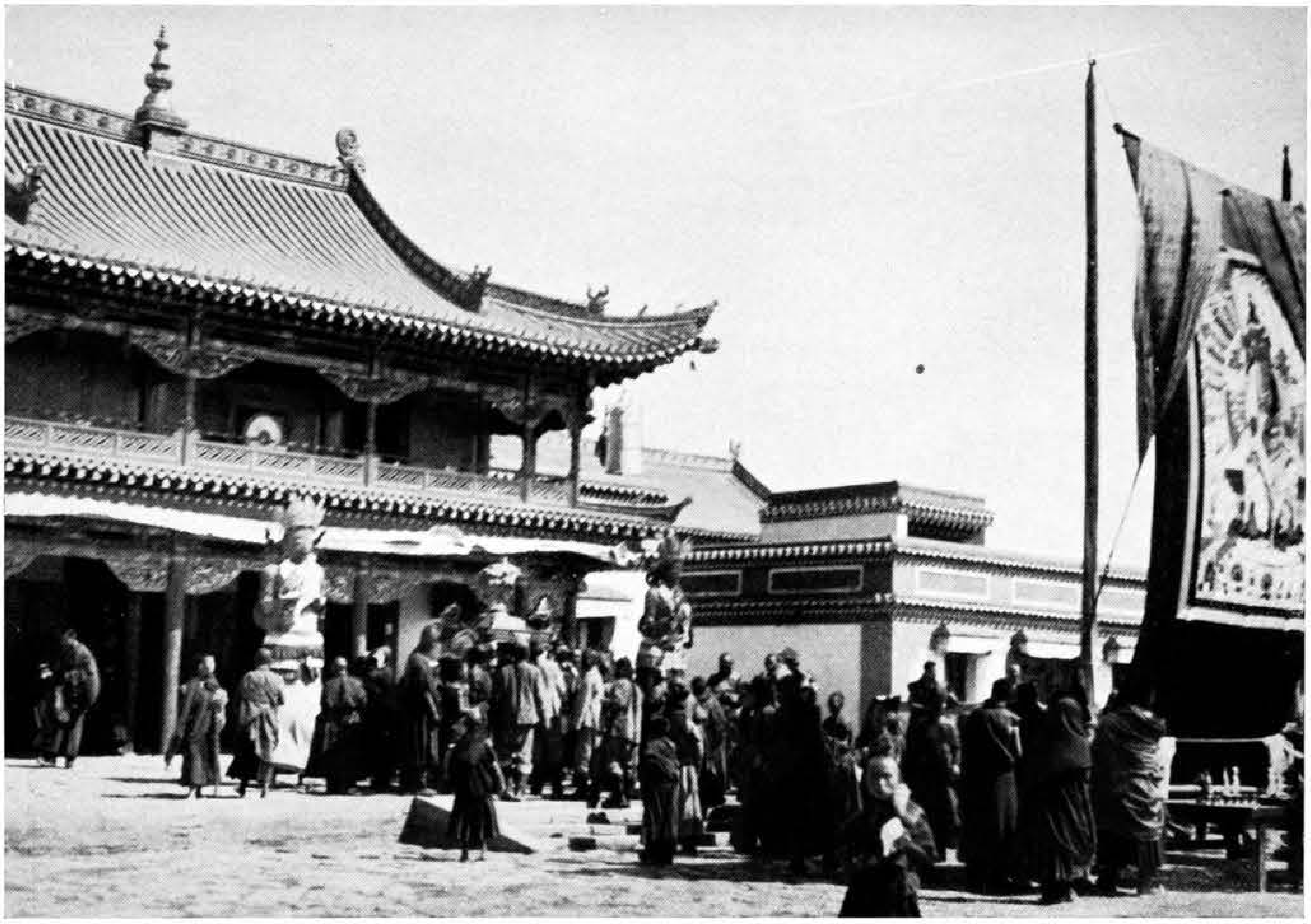
By midday everything was over. The pilgrims were dismissed and went their ways. All wore their best clothes, and the women their heavy ornaments of silver and corals: diadems, earrings, bracelets and rings. The yellow, red, green and blue colours were bleached, discreet and extremely effective. The whole festival was an unforgettable and magnificent sight.

HUMMEL, HASLUND and LIEBERENZ had been met with the greatest friendliness, and special orders for their safety and security were given at the outset. Before returning they handed over a present of fifty silver dollars for the temple and a number of trifles such as alarm-clocks, knives etc. for the sacred personages. When they took leave of JOLROS LAMA he asked if he might have copies of the photographs that had been taken at the temple, and promised to give us a letter of recommendation or passport that would be useful to us for a great part of our journey westward.

* * *

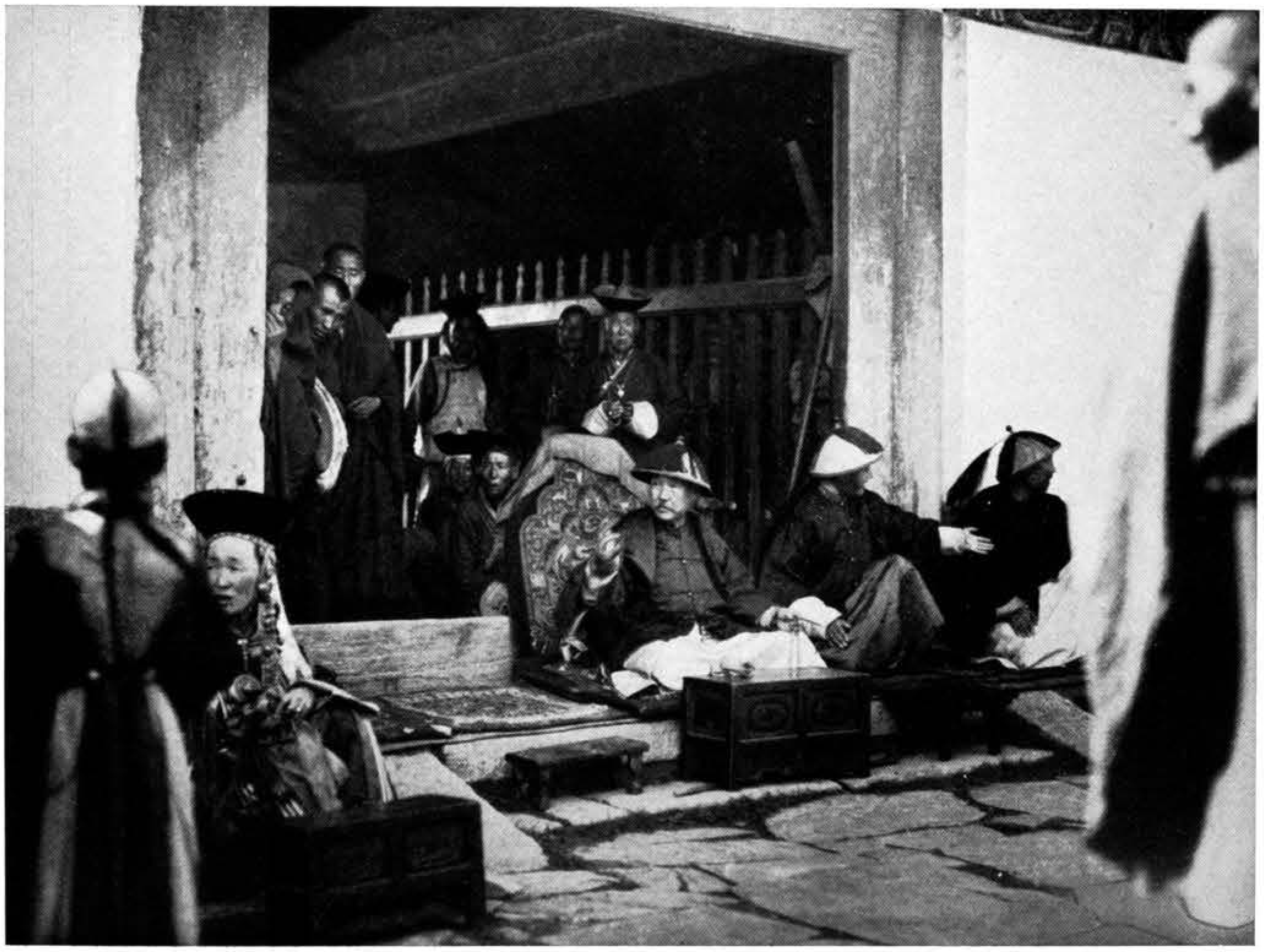
The work done by the various scientists in the expedition will be described by each of them personally; but as it has not been possible to carry out this program in detail I will here give the notes I made in the camp at Khujirtu-gol on the work by the Chinese archaeologist HUANG WEN-PI during his excursions in the surrounding country. HUANG himself did not speak any foreign language, but Professor SIU served as interpreter between us.

Dr HAUDE's meteorological work will also be accorded more detailed treatment in this connection than for example the geological work by NORIN or the archaeological work by BERGMAN, since I consider it to be a matter of general interest to know how a meteorologist goes about his work in such peculiar conditions as those afforded by a caravan journey through Mongolia.



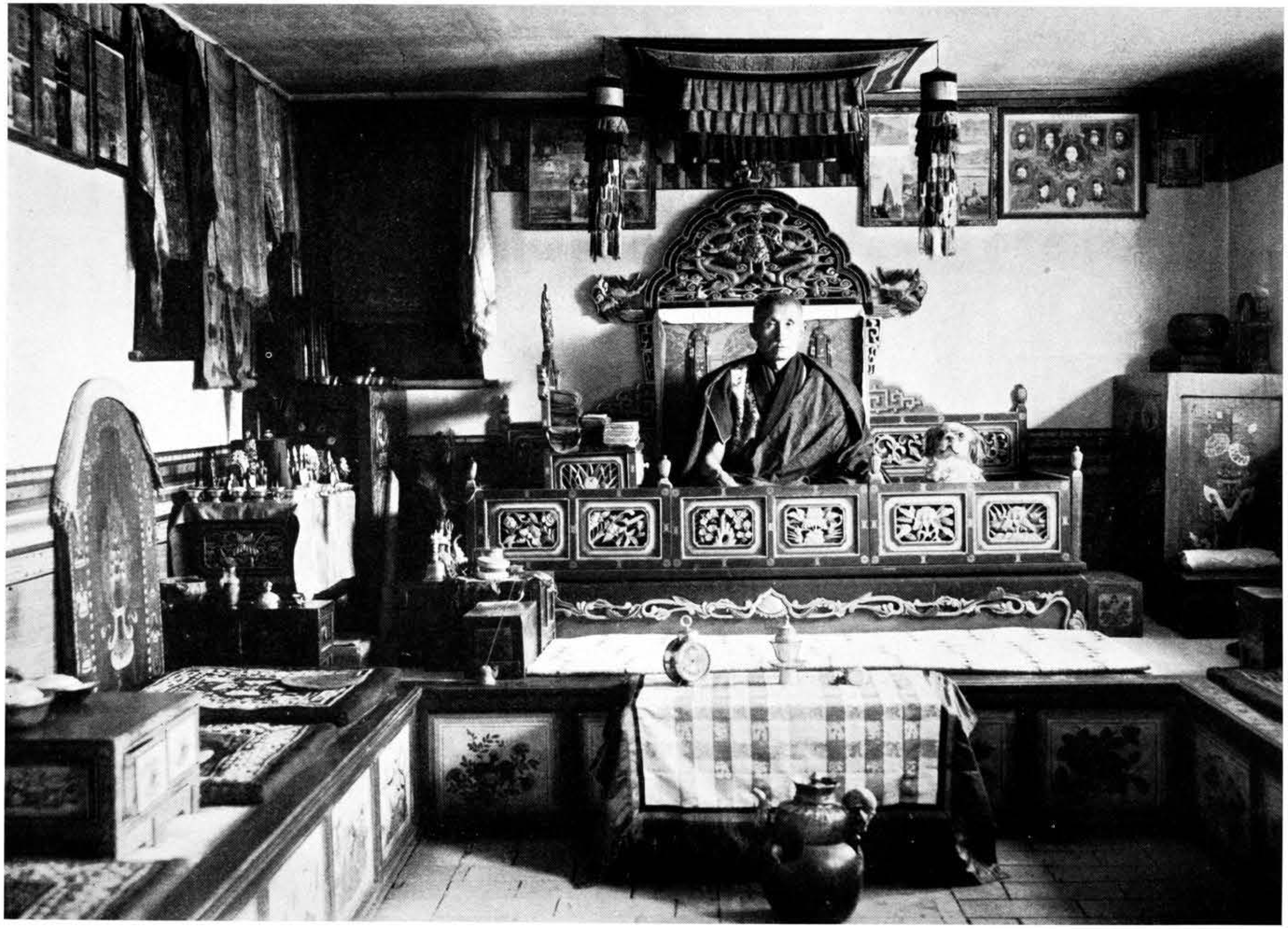
From the Maydar festival at Batu-khalagh-sume

Lieberenz Photo



Lieberenz Photo

The Mongol prince Darkhan Beile attending the Maydar festival at Batu-khalagh-sume



Jolros Lama, the Living God at Batu-khalagh-sume

Lieberenz Photo

A day's journey to the north of Beli-miao, together with the digger CHUANG, HUANG WEN-PI came across a deserted town dating from 1350. He brought into camp a whole box full of specimens of the pottery and architectonic decorative art, and dreamed of returning to make a map of the streets and houses.

He told us that this deserted town was in Chinese sources known as Ching-chow, while the Mongols referred to it as Norun-sume. He had first heard speak of the place in Beli-miao, had travelled in the direction indicated, and actually found it.[1]

On engraved stone slabs, of which he took rubbings, was written the seventh year of the reign of the last Yüan emperor, which is the equivalent of 1367 A. D. On the same site he also found copper coins from T'ang and Sung times, which were still current in the days of the Yüan dynasty.

On July 16th he returned to camp with a little caravan of ten horses from another archaeological excursion. He had ridden about forty li to the south to the old »Great Wall», following it in both directions for a distance of twenty li. He spoke of three sections of walls built in the fourth and third centuries B. C., and joined by the Ch'in kingdom to form a continuous wall. A rounded earthen mound about a couple of feet high was now all that remained of this. Here and there he found bits of burnt brick, but otherwise the wall seemed to have had a framework of wood with straw binding. It was as much as fourteen feet in breadth and had been provided with a moat on its outer, northern side.

On one of his excursions HUANG followed the remains of an ancient wall situated fifty li to the south of Beli-miao and stretching westwards south of the Khujirtu-gol. We were later to cross this wall on our way to the Edsen-gol. According to HUANG it is identical with one of the walls which each of the kingdoms Yen, Chao and Chin built in the fourth century B. C.

In another place and near a village, HUANG had found a town that was stated to date from early Han time. Of houses and streets there was not a trace, but the town-wall was distinctly marked, and it was easy to show where the western town-gate had been. The farmers at Cha-sha-miao[2] called this town »Chong-ku-leao». Here HUANG found a number of burnt bricks with zig-zag ornaments, specimens of which he brought into camp. The former town had been situated at the northern foot of the Yin-shan (the female mountain) — the Yang-shan (the male mountain) is a ridge farther to the north.

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[1] That in the course of this tour he visited the ruined town Olon (or Yisun)-sumein-tor, known from Russian maps and situated about 45 kilometers N. N. E. of Beli-miao, appears from an article in *Monumenta Serica*, Vol. 3, pp. 250 ff. (Peiping 1938). The latter town contains Nestorian monuments as first discovered by OWEN LATTIMORE. It is probable that Olon-sumein-tor is precisely the town that is referred to above, although HUANG gives another name and is slightly out in the direction. F. B.

[2] Probably = Jasak-miao, which most likely corresponds to Chaghan-obo-sume in Mu-mingghan. F. B.

Asia is very poorly off as regards meteorological stations. Nearly all the meteorological stations in this great continent are to be found in the peripheral parts, especially along the trans-Siberian railway, in British India and in Japan. On the coast of China there are only twelve stations, of which the Central Observatory in Peking and the observatory of the Jesuit Fathers in Sikawei near Shanghai are the largest and most important. In the interior of China T'ai-yüan-fu, the Shansi capital, is the chief station and at the same time that which is nearest the interior of the continent.

If in a map of the northern hemisphere one inserts all the meteorological stations that were in existence in the year 1927 one sees at a glance that innermost Asia, that comprises such an enormous part of the whole continent, is nothing but a great empty space, of whose meteorological conditions we know very little. For a year, it is true, an imperfect yet continuous series of observations were made in Urga, Ude, Uliasutai and Urumchi. As regards the desert-belts and Tibet, my own observations, carried out over a number of years, form the completest series that have been made in these tracts; and of these, those which I made in permanent head-quarters such as Yangi-köl, Charkhliq or Mandarliq are of special importance. But for the rest, our knowledge derives only from sporadic data and notes. From these available data one can, certainly, form a rough general idea of the characteristic features of the continental climate and meteorology. One knows of the terrifically violent storms near Hami and the no less violent E. N. E.-storms that rage in the Lop-nor desert in spring. We can also give theoretical explanations of their origin and the practical result of their effects. But what actual knowledge have we of their causes and characteristics? None. Actually Dr Haude's work and that of his collaborators is of such importance, that if on our arrival home we had been unable to show any other results than this, it would still have completely justified the sending out of a large-scale and costly expedition.

Haude's observatorium consisted of a cubical wooden cage with a roof and slatted walls constructed on the same principle as Venetian blinds, so that the wind could pass through freely while all direct rays from the sun were excluded. The cage was mounted on four posts, sufficiently high to obviate the possibility of the instruments being affected by the ground temperature. A couple of steps led up to it, so that one could mount to take readings. The whole structure was firmly stayed with ropes at the four corners, and it stood up to the strongest storms we experienced.

Protected minimum thermometers were exposed at different altitudes; these were set horizontally in firmly screwed holders. Insolation thermometers and other delicate instruments were laid out on the ground.

Haude had two metal masts of ten meters in height and at a distance of forty meters from each other for the antenna of the wireless. Between the masts ran also three wires, about one or two feet above the ground. We had only receivers, and were therefore not able to send any messages. VON KAULL was responsible for the wireless. The trouble with our dry batteries was that the current was finished after four minutes. The dryness of the air and the warmth that prevails at this time of the year were probably the batteries' worst enemies. We were not in the slightest interested in keeping ourselves informed of world events — rather was it a relief and a rest to be without all news from the outer world. All we wanted was to pick up the time-signals from Nauen (18050 m), Bordeaux, Cavite or Batavia, in order thus to get the longitudes gratis and assured. But we realized well enough that for inexplicable and insuperable reasons we might not succeed, and were therefore quite prepared to find the longitudes in the usual and time-honoured way.

Daily observations were made at Dr HAUDE's observatorium at the internationally accepted times — 7 a. m., 2 p. m. and 9 p. m. — and in addition, in a permanent camp like No. VIII, every hour of the twenty-four. This work was entrusted, at night, to those on sentry duty.

As aids to the observations on atmospheric pressure, temperature and moisture, a barograph, a thermograph and a hygrograph were installed in the meteorological cage. Dr HAUDE took an especial interest in the height, form and direction of movement of clouds, and he secured a large series of uncommonly beautiful photographs of different types of clouds.[1] Both in the camp itself and on the crown of a hillock, twenty-six meters in height, the velocity of the wind was regularly measured. The maximum had so far been between twenty-eight and thirty second-meters, which amounts to eleven on BEAUFORT's scale, or violent storm. In the tract where we were encamped the wind was nearly always blowing, and in a very characteristic way. It began at eight o'clock in the morning, increased until midday, and died away about six or rather later. The nights were as a rule perfectly calm and clear. In the beginning of July a cloudiness that waxed from day to day made increasingly obvious the warming up of the continent. Thus far, the clouds had given but little rain; but one none the less saw it raining, now here and now there, every day. One saw also, however, how the lower fringes of the draperies of rain hung in the air without reaching the earth. The greater part of the rain evaporated on its way to the ground. This notwithstanding, rain-frequency had risen steadily throughout the month of June. In camp VIII we were at an altitude of 1595 meters. We had therefore to reckon with a rising mobility of the atmosphere. On the way to Ghashun-nor the ground fell away, and at the lake one was probably 700 meters lower than in the camp.

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[1] Some of these are, reproduced in HAUDE's *Ergebnisse* (Vol. IX: 1 of this series) Bild 12 and 18—20, as well as in Vol. IX: 2 Bild 5—7, 9—12. F. B.

The rainfall thus decreased on account of the configuration of the ground. Only in small quantities does the moisture of the sea-winds reach the interior. The law that, roughly speaking, may be stated for the whole continent is that the sea-winds rise in the peripheral parts and drop their moisture on border mountains and in the plateau country. For this reason there was also considerably more rainfall at camp VIII than at Ghashun-nor.

As a result of his researches, Dr HAUDE hoped to find out whether something might not be done for the cultivation of the soil here, and whether afforestation might be carried out. In this case the country would rise enormously in value. It is, however, also possible that the Mongolian steppe is so intimately conditioned by the climate that it is not to be tamed.

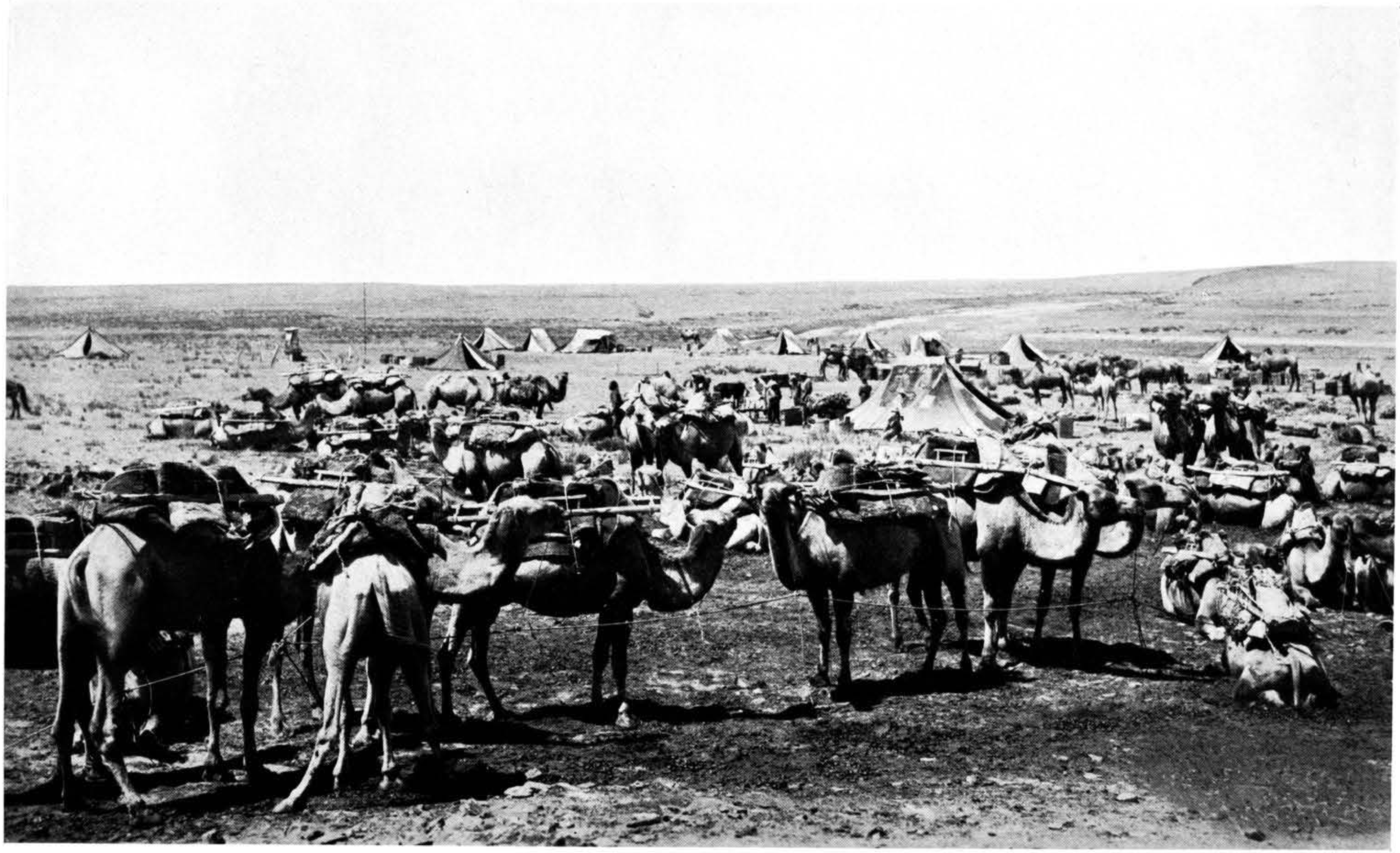
Another problem to whose solution we hoped to be able to make important contributions was the problem of dessication, or Inner Asia's undoubted progression towards a dry period. That such is the case is evident from the fact that nearly all the lakes are sinking and becoming smaller.

Furthermore, Dr HAUDE made very accurate and fine observations of the insolation and the nightly radiation. The layering of the air over the surface of the earth at night was also made the object of his studies. Such series of observations he had carried out in Pao-t'ou during the six weeks when the staff were waiting for me to join them. He kept up the observations, not only in camp, but also on the march.

The altitude of our camp, as has already been mentioned, was 1595 meters. We were thus living in a dry, sunny and healthy mountain climate, that was strongly reminiscent of Davos. All the members of the expedition were therefore in tiptop health, and it was only in acute cases, especially among the Chinese and the Mongols, that we had recourse to Dr HUMMEL and his medicine chests. The wind was, indeed, sometimes rather trying; but when it fell, and the sun blazed down, one missed it again and began to long for it. So far, we had not had a higher temperature than 32.3° Centigrade; and however hot it was during the day, the evenings were always delightfully cool, and the nights were cold. For summer travellers in Mongolia the nights are a blessing and a salvation. The daily amplitude rises to as much as 25 and 30° C., which is very considerable.

The pilot balloons

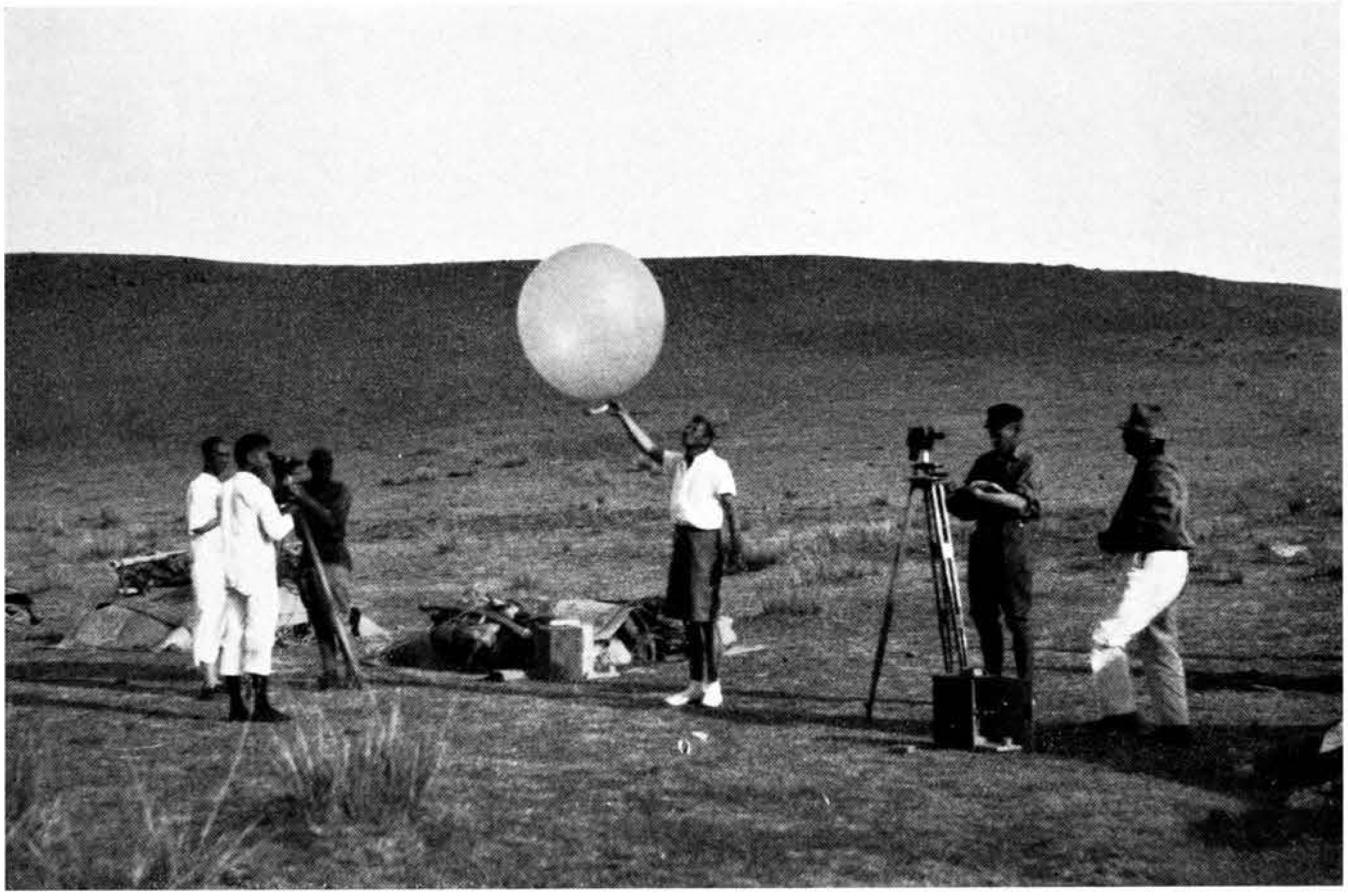
Every day Dr HAUDE sent up a pilot balloon. We were told that only a couple of such balloons had been sent up in China — in Peking, and presumably also in Sikawei. This particular method of study seems not to have been introduced to any extent worth mentioning in India either. Our nearest pilot-balloon station was thus Irkutsk. In this respect the whole of Inner Asia is a vast *terra incognita*, including also the whole of China proper.



Lieberenz Photo

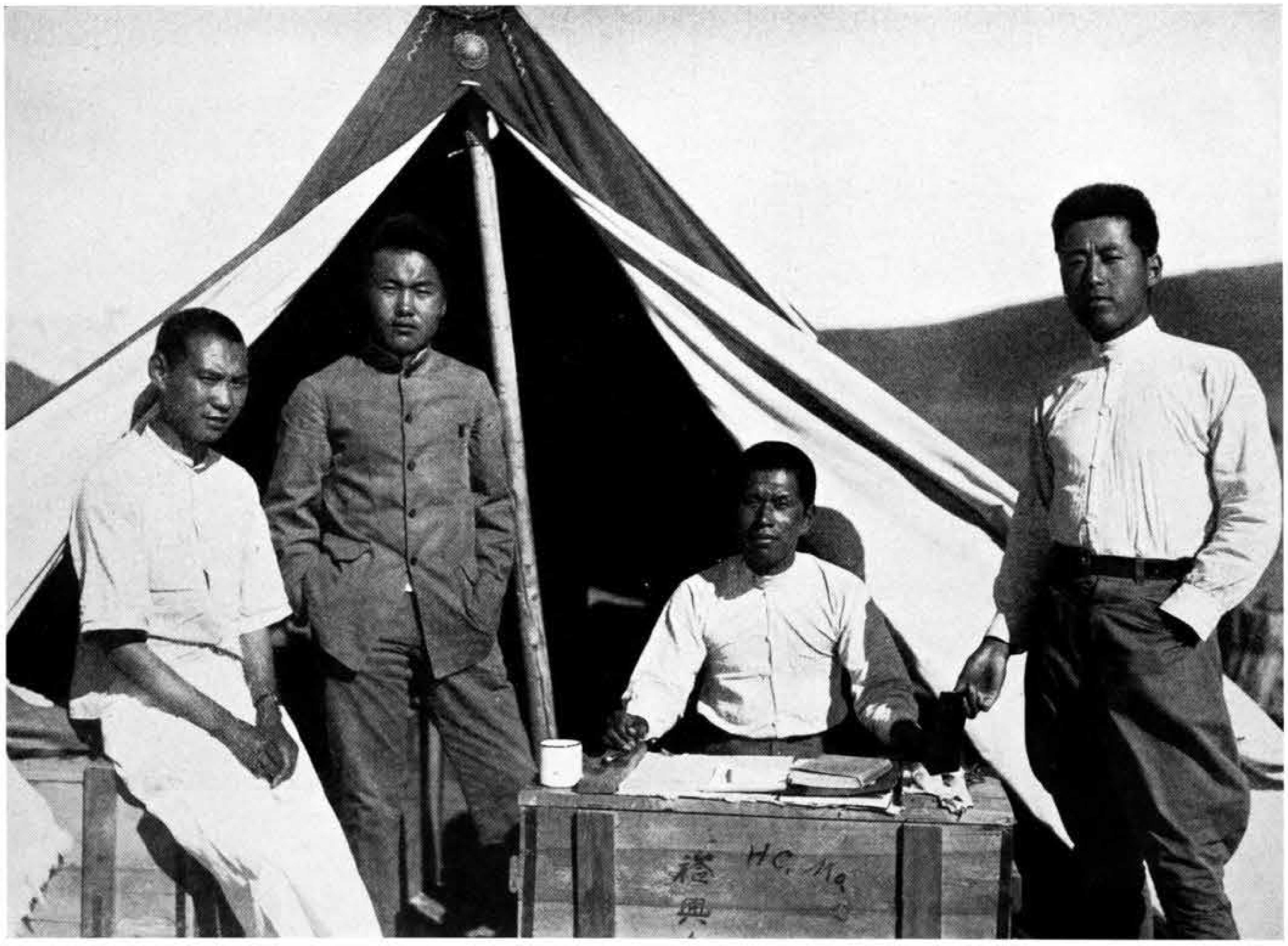
Camels being saddled in Camp Khujirtu-gol

PLATE 16



Lieberenz Photo

Haude sending up a pilot-balloon. From the left: Ts'ui, Li, Walz, Haude, Mühlenweg, the author



Our Chinese students. From the left: Ts'ui, Liu, Ma, Li

Lieberenz Photo

It is a generally known fact that on account of its friction with the ground, and the varying configuration of the earth's surface, the wind is subject to constant changes in its structure. In the troposphere, which reaches an altitude of 9—11,000 meters, periodical changes take place both with the seasons and during the different hours of the day. In the stratosphere, comprising the region between 11 and 18,000 meters, the west wind prevails, as the air is stiller here than at atmospheric levels nearer the earth, while the earth itself moves eastwards. Such conditions are prevalent in the region of the trade-winds, and since the vast desert tracts of Central Asia through which our caravans were travelling have the same latitudes as the trade-winds we were greatly interested to observe whether the same laws in the higher atmospheric levels apply for these continental spaces as those which have been established for the regions over the ocean. We were thus engaged upon a problem with ramifications over the whole globe.

At the equator the air becomes hot and must thus rise. Cloud-formation and copious rainfall are the results. At 30—45° latitude north of the equator the masses of air sink again and reach the earth dry. We therefore find throughout the whole of Asia belts of desert within these latitudes.

By means of the pilot-balloons we intended to find out by what channels the exchange of air between the pole and the equator takes place over the earth's widest expanse of land. The pilot-balloons not only give one information as to the direction of the wind in the higher regions, they also indicate the changes in the distribution of the atmospheric pressure at different altitudes over the surface of the earth.

During the month of June Dr HAUDE sent up forty-nine pilot-balloons. This meant sending up generally two balloons a day, between 6 and 8 a. m. and between 5 and 7 p. m. Some of them burst at different heights, as a rule at 2000 meters over the camp. Three of them exploded in the tent where the filling took place. They were released both in clear weather and when the sky was overcast. From the beginning of July only one balloon was sent up daily, in the morning.

The mean height for the first month was 7500 meters above sea-level; the maximum height was 14,700 meters.

The pilot-balloons that are sent up from vessels are a good deal larger than ours. We had three sizes, but even the largest were too small to be observed distinctly above a height of fifteen kilometers. These balloons are made of yellow or red rubber. The little ones have a diameter of about 75 cm., while the larger ones are 120 cm. in diameter. The former are 30 gr. in weight and must be able to carry 80—90 gr. before they are released. The large ones weigh 110 gr. and must be capable of carrying 325 gr. The little ones have an upward drift of 150 meters a minute, the larger ones of 250 meters.

When filling balloons one opens the main valve at the top of a gas-cylinder, and the current of gas through the rubber pipe is regulated with another valve. The rubber must be warmed up to about 30° C., so Dr HAUDE used to carry the balloon in his pocket for a while before filling. It sometimes happened that during the filling the balloon did not take on a perfectly spherical shape. HAUDE then pressed and squeezed it in his hands until it was quite round. This was important, for an irregularly shaped balloon is more liable to burst than one that is quite round. Moreover, the formulae that are used in the calculations do not hold good for irregularly shaped balloons.

The balloons were supplied by the German firm Continental, in Hanover, and they proved satisfactory. While in Tientsin HAUDE had had the balloon-cases soldered into small tin boxes to protect them from the effects of the dry desert atmosphere. This device had, however, the drawback that it did not allow the entrance of cooler air.

The cylinders of hydrogen-gas cost nearly 4000 Mexican dollars. Our gas-cylinders were of two kinds: the larger ones held six cubic meters, the smaller ones four cubic meters.

Of course we took all possible precautions to ensure that the cylinders should not explode in the heat of the desert. Every cylinder was sewn up in thick felt and screwed fast in a wooden frame which in its turn was wrapped in a bast-mat. The whole load, when on the camel's back, was covered with a firmly roped bast-mat, so that the cylinder should not be exposed to the direct rays of the sun. When later on they were unloaded on sandy ground, the surface sand was shovelled away, so that the cylinders should not come into contact with heated ground. They were placed, moreover, always several hundred meters distant from the tents, and on the march the hydrogen-gas column proceeded at a slight remove from the rest of the caravan. Everybody referred to the cylinders, characteristically enough, as »the bombs».

One camel bore two of the larger bombs, amounting to a load of 220 kilograms. The smaller ones weighed two thirds of this and thus formed a light camel load. Nineteen camels were required for the hydrogen-gas alone.

With each balloon that was sent up was a little slip of paper to inform the finder, if any, that he would be paid $10 if he sent the slip to our Chinese committee in Peking, saying where he had found it.

From the moment of its release each balloon was observed on its airy journey with the aid of two telescopes whose vertical and lateral angles were read and noted at regular intervals.

As a rule, each flight took thirty-five minutes, the balloon rising at a speed of about 200 meters a minute. The preliminaries took from twenty minutes to half an hour, while the calculation of the results took several hours. The course of each balloon was mapped on a diagram.

Dr HAUDE requested to be allowed to register the meteorological elements for the whole month of July at Khujirtu-gol, and as this could be done without any great difficulty entailed the request was granted. When the rest of us set off with the great caravan, ZIMMERMANN, MARSCHALL and LIU, together with one Mongol, stayed behind until July 31st. The meteorological cage was also left, and observations were to be continued as usual. HAUDE thus obtained two full months' observations for comparison with the results of other Asiatic stations, and he considered this an important gain.

HUMMEL's MEDICAL WORK

The doctor received patients now and again, for the most part Mongols, who suffer from all sorts of complaints, chiefly skin diseases and trachoma. Either LARSON or HASLUND did service as interpreters. One day LARSON came up with one of his camel-drivers, and I heard him say to HUMMEL: »This lad's got a boil on his belly. Don't cut him up too much, for I need him to-morrow».

NUMBER OF CAMELS

We had now finally got so far with our camel purchasing that we could begin to discuss the question of a definite date for breaking up from the permanent camp. The total number of camels, including NORIN's and YUAN's animals, was 289. We had bought 292, but two had died and one had run away. All had a branded H on the left jowl. The average price for each camel had amounted to 88 dollars — a very reasonable sum, considering the high quality of the majority of the beasts.

To the best of my knowledge, this was the largest non-mercantile caravan to set off for the interior of Asia in our time, and in any case the largest scientific expedition.

STARVING THE CAMELS BEFORE SETTING OFF

Our camels, many of which had been browsing in camp for quite a long time without doing any work, were terribly fat. Indeed, they were much too fat. I had never heard, though, of pack-camels that were about to start on a long desert journey within a few days being *starved* for three days. But this is what actually happened. About a hundred of the fattest beasts were tied up in camp for three days for a little slimming cure.

LARSON confided to me that he had lain awake a whole night, and what was still worse, that the Mongols could not sleep in peace for fear of the camels. When these animals have been without work for seven whole weeks, only eating and swelling from day to day, they become lusty and unruly and develop proclivities for neck-breaking pranks. On account of their swollen flanks it is difficult to get pack-saddles and loads to »sit» properly, so as to balance evenly with their swaying gait.

I myself was to ride a quiet old she-camel, eighteen years old. One could pat her over the eyes without any unpleasant consequences. If one tried any such manoeuvre with the others they would spit, and before one knew where one was one had a greenish yellow soup, in appearance not unlike stewed gooseberries, all over one's face and clothes. And this soup was not exactly fragrant.

DELAYED START

»The best-laid schemes o' mice an' men gang aft a-gley.» After conferring with LARSON I had fixed upon July 20th as the date for our start. From early on the morning of the 19th the whole camp was taken up with packing. By lunch-time I had already finished mine. LARSON, who had a minimum of baggage, had finished in a quarter of an hour. The Mongols had been busy since dawn, fixing the pack-saddles on the hundred liveliest and therefore most dangerous of the camels.

But the sky was covered with thick clouds; it was raw and windy. Soon after lunch it began to rain. I had never guessed that we might be held up in these tracts by *rain*. Formerly we had complained of the drought. What would happen to the summer grass if the soil got no moisture? We had been longing for rain just for the sake of the camel pasture. And now we had our wish. Although it came down pretty hard, some time nevertheless elapsed before the dry ground became so wet that one's shoes began to squelch when one went out. In the afternoon it was raining more heavily still. All the heavy baggage, provisions and a thousand and one other things stood in pairs with ropes round the boxes, waiting only to be lifted up on the camels' backs. There was danger of flour, sugar and other perishable goods being altogether spoiled. All the provision chests were therefore covered with canvas.

The hours passed. The ground was now soaked. There were puddles of water in every hollow and wherever one went the earth gurgled its repletion.

The hundred camels lay patiently in the wet and chewed the cud. LARSON came and reported that it would be impossible to start on the 20th, for the felts and ropes of the pack-saddles were drenched with water. By the evening of the 20th it was obvious that we should not be able to start before the 22nd. The pack-saddles had not had time to dry more than superficially and were still sour inside.

THE START FROM KHUJIRTU-GOL

The morning of the 22nd July dawned at last. At five o'clock I was roused by LARSON. Day had just begun to break, but in my tent it was still so dark that I could scarcely manage without a light. I got dressed quicker than usual, for I had been longing for this day. I felt that it was going to be a day that we should all remember.

From the camp outside I heard the sounds of a bustling activity and shouted orders. LARSON was setting his Mongols to work, camels were screaming angrily as the heavy chests were lifted up on their backs. Words were bandied back and forth, one heard questions and answers in Mongolian, Chinese, Swedish and German, in Danish and English.

By 5.45 a. m. we were all sitting down to breakfast — for the last time assembled at the Khujirtu-gol. LARSON was as cool as a cucumber and only longed to be off. »Is everything ready?» he demanded of MERIN, the head of the Mongols and a magnificent type looking like an Indian chief. »Yes, all the camels are loaded. We're taking just a hundred and fifty with us; ninety-eight stay behind here for the present.»

LARSON went forward to the front to lead the first section on foot. Another section was led by MÜHLENWEG. None of the other Europeans accompanied them. LARSON had eleven Mongols — all too few for such a flock of camels.

The ninety-eight camels that LARSON was not taking with him were to transport the camp to our destination for the night, about fifty li to the west. Among these camels were some of the quietest of the animals — most of them being of the number I had bought from ANDREWS.

Tents were now struck, beds and other furniture were rolled up, the camels were led forward to their loads, the camp-kitchen was packed and we waited patiently till everything was ready and we might set off. Meantime, Dr HAUDE sent up his seventy-eighth pilot-balloon. It rose to 8000 meters above sea-level and then disappeared in a cloud.

My Mongol MENTU now came up and put the red halter on my riding camel. The animal was just about to be loaded when MENTU disappeared again; nothing happened, and we sat down to wait. There was a hard wind blowing from the south, the sky was clear and the sun blazing. A herd of Mongol horses were browsing on the other side of the brook, and Hami, who could not stand horses, tried in vain to chase them away. The half sleepy atmosphere that now prevailed was the calm before the storm.

REVOLT OF THE CAMELS

The next moment there was a shout from the Mongols: »LARSON's camels!» They were pointing over the steppe to the north-west. In the twinkling of an eye our Mongols were transformed. They flung themselves up onto their swift-footed riding camels and set off at a wild gallop to the north-east to cut off the nine camels that were flying eastwards in full career. One of these still had his load on his back, a couple of the others had pack-saddles — the rest had nothing at all.

It was not hard to understand what had happened. The nine camels had shied,

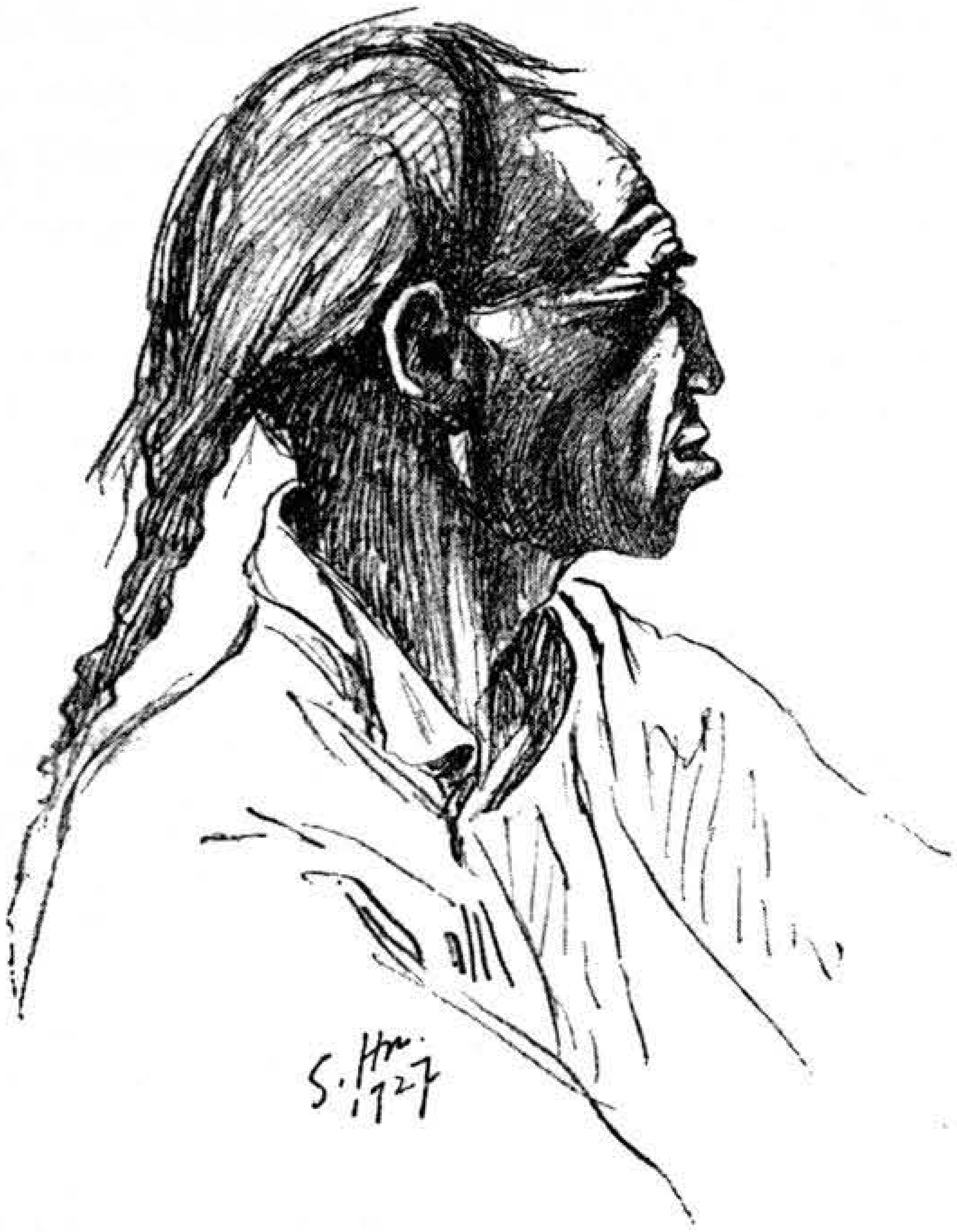


Fig. 3. Merin, the head of our Mongol camel-men, looked like an Indian chief

torn themselves loose and bolted. In the distance, on the crown of an undulation, the doctor discovered about fifteen more camels silhouetted against the horizon and flying northwards like the wind. The accident was not, then, restricted to only a few of the animals; we had already seen a sixth of the whole caravan.

It was now twenty minutes past eight. We waited for news from Larson. The doctor, Dettmann and myself climbed the nearest hill and swept the west with our field-glasses. At a distance of a couple of kilometers about fifty camels were peacefully browsing; but they belonged to a Chinese merchant. Far away to the west one saw a row of bright dots — evidently thrown off chests, and darker streaks that were probably some of our beasts. On the ridge to the left, to the south-west, a white camel was running with a chest on its back, closely pursued by one of our Mongols on a riding camel. The runaway was soon caught up and captured. The Mongol led him towards our camp, which was nearest. The camel cut up rough and was unwilling to follow. Dettmann and Hummel hurried down to help the Mongol to unload the camel and lead him into camp. From the north-east came the nine we had first seen. The white camel's left thigh and flank were flayed and bloody from the sharp edges of the chests. The loads were not intended for such a speed. As long as a camel goes quietly his body naturally does not come into contact with the load. A couple of the nine were also chafed and bloody.

Meantime, Walz had paid a lightning visit to the scene of the accident and now came back with news.

»Things look simply awful,» he said; »everything flung pell-mell on the ground and over a hundred camels missing.»

»Well, what does Larson say?»

»He says he wants a couple of butts of water and considers that the caravan should be reorganized at the new camp.»

Walz's riding-camel stood among the others, tied to a sack of rice, not by the nose-rope but by a halter. For some obscure reason the animal shied, and plunged right into the midst of the other camels, bucking furiously and swinging the sack of rice hither and thither as if it had been filled with feathers. He rushed in among the tents that had not yet been struck, creating a regular riot wherever he went, finally plunging back among the tethered camels and infecting them with his own madness. At last he was captured and firmly anchored.

Accompanied by Hummel, I betook myself on foot to the scene of Larson's accident. The distance thither was only 4 kilometers.

Long before we reached the spot we found the steppe strewn with pack-saddle felts — singly, in heaped disorder or tangled in ropes. (A Mongolian pack-saddle consists of six oblong pieces of felt, which are placed on the sides of, before and behind the humps, being held hard together by two lateral shafts whose ends are roped together.) At longer or shorter distances from our path lay chests and sacks, boxes, tent-poles, bedding and other bundles — all strewn about in fearful confusion. But the new camping-place, where the panic had broken loose, put the cap on all we had seen.

About fifty camels stood already tethered by their nose-ropes, surrounded by a perfect pell-mell of chests. Comparatively few of these were broken, but some of them bore traces of blood. Larson came to meet me, calm and collected, but none the less dashed. He muttered something about the destruction of Jerusalem, Poltava and Waterloo, finally epitomizing his pent-up emotion in a simple:

»I'm so frightfully thirsty!»

»Wait a minute, then, here come's water!»

The camel was made to lie down, the cask was set on the ground and Larson proceeded to quench his thirst. I don't know how many mugs he drank, and he was joined by Hummel and myself. Water is a lovely drink, especially in these dry, summer-hot tracts.

And now Larson commenced his tale! From the first moment he had noticed that the camels were seething with unrest. They were nervy, they looked towards the horizon and made hasty movements with their heads. The caravan progressed slowly. Frequent halts were made to see that the loads were properly adjusted. The three columns kept at a certain distance from one another till they had journeyed three kilometers from the camp, when they divided up into five sections.

These sections marched abreast, and got too close to one another. LARSON soon noticed that it was no good trying to keep the camels quiet much longer, and he decided to pitch camp. As it happened, however, the whole caravan chanced to have halted in a sort of hollow beside the stream, and thinking of the possibility of flooding in case of heavy rain LARSON resolved to proceed a little further. Only a couple of hundred meters farther on was a better camping-site on a slight declivity. If he had stayed in the hollow the accident would not have taken place. But as ill luck would have it, just on this last little stretch one of the last of the files got loose and went ahead beside his comrades.

He increased his pace. The chests that comprised his load began to bump up and down and their contents to jingle. Frightened by the unaccustomed noise, he shied and bolted. The camels in the nearest files started, shied likewise, and followed suit, dragging all the others with them. The result was chaos. If they had run in an ordered troop to the west, the Mongols could have ridden past them and checked their flight. But they ran in circles for a couple of laps. Most of them jumped and bounded to get rid of their loads, that soon began to fall right and left. They flew hither and thither and seemed for the powerful camels to be as light as match-boxes. There was a crashing and a smashing sounding like the collapse of a building — it was to risk bruises or even mutilation to be in the midst of this turmoil. LARSON, who was on foot, held his rope in one hand while in the other he had his Mongolian camel crop, a yard long instrument as thick as a cudgel. With this he struck the crazed animals ruthlessly on their sensitive noses, just where the nose-pins are thrust through the cartilage. The sudden pain stunned the animals and they calmed down and remained behind. Whenever they showed signs of bolting they got a rap on the nose. LARSON had about twenty camels in his file. He hoped he might hold the lot, but a bolting string of beasts came careering from the side and charged right through his file, so that he was left with only seven. The others dashed off. MÜHLENWEG fought pluckily, and LARSON admired his presence of mind and his strength. His only fault was that he wanted to save too many at once.

Only thirteen of the hundred and fifty camels could be held back. All the others vanished like chaff on the wind. A big camel with two chests weighing together two hundred and twenty kilograms bounded over the stream like an antelope. LARSON had once been up in Mongolia with a caravan of a hundred camels loaded with hides and wool, that had revolted in the same way. And he had often had experience of minor accidents of the kind. But he had never dreamed of anything like the revolt of July 22nd, when *all* the camels had gone mad. He mumbled something about a useful lesson:

»But I'll teach you, you rascals! I'll make you go eighty li a day for eight days, with four hundred catties on your backs — that'll take the ginger out of you!»

The Mongols intended to keep a sharp eye on the camel that had begun the trouble. He was to be taken down a peg. He was to have extra heavy loads to tame his temper. For the rest, the Mongols assured us that the catastrophe was by no means due to the fact that the camels were too fat and well-fed and rested, or that they had shied; it was simply a natural consequence of their own failure to sacrifice to the spirits of the region at the sacred *obo* near the site of our former camp. I begged them, by all means, to sacrifice for all that they were worth, so that we might be spared sacrifices that I had to pay for in the form of runaway animals and lost chests.

LIEBERENZ was in despair at not having gone with LARSON. LARSON told him categorically that such a spectacle, if filmed, would be unique, and worth fifty times as much as it had cost. But he added consolingly and considerately that he would have other opportunities on the way to Ghashun-nor. And I endeavoured to comfort him by suggesting that if he had been mixed up in that pandemonium he would have been mince-meat by this time, and his film camera would have been trampled to smithereens.

I asked LARSON if anything important was missing. »Yes, two chests of silver with four thousand dollars. We're making a special hunt for them, but so far in vain. MÜHLENWEG is just out looking for them. What shall we do if the money is lost? If bandits or thieves find the chests we shall have seen the last of them. Four thousand dollars is too big a hole in our treasury.»

»Well, come what may, I'll not send any more envoys to fetch money from Peking.»

At seven o'clock in the evening a Mongol came in with fifteen camels in tow, several of them with loads. »Hurrah!» shouted LARSON, »here we have the missing chests of silver at last!»

We were much like ship-wrecked sailors, combing the beach for what might be washed ashore. It was clear that we should have to stay here for at least three or four days; the excited camels would need a spell of quiet in which to calm down. It was, moreover, evident that LARSON needed more men for the big caravan. He wanted to employ ten Chinese to help the Mongols. A message to this effect was therefore sent to the nearest villages.

ADDITIONAL CAMEL-MEN ENGAGED

On the 24th four Chinese turned up. They were farmers, but used to looking after camels. On account of the insecurity created by roving bands of robbers the farmers considered it scarcely worth while to cultivate the soil, and they were therefore only too glad to get paid work. I was pleased that we were thus in a position to do each other a mutual service. Our new camel-hands were to get fifteen dollars a month and would be hired for that period.

The three craziest of the camels were kept tied up the whole day to be starved and cowed. One of them was the leader of the revolt. He was to have a new peg through his nose, and it took four powerful Mongols to force his will. He would not lie down. The fellows slung a rope round one of his fore-feet, took it between the humps and then hung on it on the other side with all their weight to get him to bend his leg and go down on his knees. Finally they got him down. But he then rose up on his hind legs, reared and plunged and bucked in the most vicious way. He was blazingly angry and a positive danger. LIEBERENZ was able to film his stubborn fight.

We took tally of the camels in the evening and found that three were missing. Of these there was hope of getting one back. The other two might be wiped off the slate, but it was perhaps just as well, since they were completely off their heads.

TSERAT's RETURN

On July 27th TSERAT, our intelligent Chinese-speaking Mongol, returned from his journey to Peking, where he had been obliged to wait for twelve days while my representative in Peking procured a ZEISS *Reisetheodolit* from the firm of CARLOWITZ in Tientsin. Chronometers, on the other hand, were unprocurable. TSERAT had had no unpleasant adventures on the road and he had carried out his commission like a white man.

V. FROM KHUJIRTU-GOL TO SHANDE-MIAO

THE REAL START

At last, on July 29th, LARSON was able to set off with the main part of the caravan (150 camels).

On the 30th the rest of us left camp IX to follow the caravan route to the west.[1]

The sky looked very threatening. Between the humps of my camel I had the same furnishing as on the journey from Pao-t'ou. Bed, furs, cushions and blankets were rolled about my two small, hard suit-cases, forming two regular packs on either side of the camel. Between these and the humps were stuffed thick blankets, a mat and the sheepskin coat with the wool outwards. My rolled-up tent was bound fast above the rear hump. In the resulting hollow I myself sat with crossed legs. The animal was led by the Mongol MENTU, so that I did not need to think about the nose-rope but could devote myself undividedly to the work of mapping the marching-route.

Pacing tests had shown that my camel took a stride of about one meter. In the course of this day's march it covered 4695 meters per hour, so that the whole distance amounted to 24.6 kilometers.

The country to the west of the Khujirtu-gol is extremely flat. The plain is nevertheless traversed by broad furrows giving rise to the formation of long waves. Fresh grass grows in the troughs, otherwise the ground is sparsely covered with a low, sweet-smelling Artemisia.

At nine o'clock the first drops of rain fell. This increased until a steady rainfall obliterated the endless plains from view.

After an hour every path glittered like a winding band of silver, and streamlets and pools shone up here and there. The camels' feet slithered and splashed, and where the ground consisted of a fine yellow clay a treacherous slipperiness made hazardous going. The camels stumbled and slid, and one sat precariously balanced, waiting to be flung to the ground at any moment.

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[1] As it afterwards transpired, we were now travelling the same road as that which Mr OWEN LATTIMORE had taken the year before, and that he so brilliantly describes in »The Desert Road to Turkestan» (London 1928). We were to follow precisely the same route as he all the way to Boro-tsonch just east of the Edsen-gol. F. B.

Water flowed into my bowl-formed nest from every direction. Certainly I began to feel that I was not in the driest of seats, but it was not until the water commenced to gurgle and splash in my »bowl» that I realized that I was sitting in an unprescribed sitz-bath nearly half full of water.

In the middle of the day the rain came sheeting down. As if through glass walls I saw Bagha-nor (Little Lake) in the south-west and the little monastery Dagain-sume to the north-west.

MENTU's camel shied at every camel-skeleton on the route. And there were not a few.

To the right of the road could be seen several Mongol yurts and herds. Quite often we started flocks of wild ducks.

We were going through a regular downpour. I could not possibly become any wetter than I already was, but my note-book! It was not so easy to get pages apart afterwards, and some of the notes and lines could only be made out thanks to the traces of the pen on the back side of the paper, where small ridges had been formed.

At last we caught sight of camp X at Chendamen, with LARSON's, MÜHLENWEG's and LIEBERENZ's tents. The tall caravan leader came grinning towards me, clad in his long light blue robe and asked innocently if I had got wet. »Oh no, nothing to speak of. But look out when the camel kneels.» I lifted my legs and a regular waterfall cascaded from the sitz-bath over the camel's neck.

THE PLEASURE OF ISOLATION

There is a certain pleasure in knowing that one cannot be reached by letters, newspapers and telegrams, and that one is completely immune against interviewers and telephones. It is a rest indeed to go to tracts that cannot be reached by news. The only things that interested us were the state of affairs in the caravan, the progress of the work, the topography and general scenery on either side of the day's route and the appearance of the nomads we passed. Only one slender little thread connected us with the outer world: the time-signals from Nauen. It was lovely to rest from European civilization and to live in such totally different surroundings. The great Orient had caught us and veiled us away from the world in her gentle, serene and unostentatious way.

ANCIENT GRAVES

July 31st had to be devoted to drying our effects. It was a Sunday; the sun shone and warm winds blew. After the recent rain the pasture here was excellent. The Mongols of the district came and paid us a visit and we bought sheep of them for $3.50.

Fig. 4. Young Mongol

Fig. 5. Mongol Lama

LARSON informed us that there were some ancient graves at the foot of the nearest mountain. HUANG and Professor SIU became so interested that they set off, accompanied by some of the European members, to see the spot for themselves. HUANG afterwards began to dig on the site, but the Mongols of the tract complained that Chinese were digging in their soil and disturbing the earth spirits.

The graves consisted of squares of stones, within which had been placed smaller stones. There were about a dozen of them. The largest was 8 × 5 meters, and another 6 × 4 meters. In the former one saw that the outer border of stones, some of them as much as one meter in cross-section, were vertically placed flags forming a sort of fence around the interior of the grave, where other stones were roughly strewn. In one place there was a row of vertically placed stone-flags, twenty-two in number and with intervals of several meters between the stones.

On the 1st August we put our clocks back one hour.

We followed the great caravan route, and soon came in among small hills. By eight o'clock it was already so warm that I had to take off my thick leather waistcoat. At half-past eight we were approaching the last file of LARSON's caravan. When we were barely a hundred meters distant we heard wild shouts and saw the file spreading out and scattering, the camels rushing right and left. The loads were thrown crashing to the ground. But the runaways were soon captured by a couple of riders.

We crossed a rise in the rather uneven ground. On the right, to the north, a rugged black rocky ridge could be seen. The soil here bore a rich growth of low Artemisia from whose stand isolated blades of grass peeped forth in places.

Presently we met two poor Chinese farmers, leading a camel that bore their bundles. Once more we traversed rising ground. A widening perspective to the west and the south-west met the eye. The low hills fell back to either side. Quite near the road to the right was an erosion-bed that had cut off the side of a hill. »There will be water there,» said Mentu. A little farther on we crossed a dry channel, called Chaghan-khada. It was a couple of meters in depth and about ten meters across. The growth of grass in this place was exuberant.

Twenty minutes later we traversed a river-bed in which water flowed towards the south, to the Huang-ho or as the Mongols call it, Khatun-gol. This little water-course is called Khonin-chaghan-cölo-gol (The White Stone River of the Sheep). On the left bank were visible some walls of sun-dried brick, a couple of huts of the same material and a yurt. Just above these dwellings Larson had pitched camp.

CHINESE TAX-STATION AND FARMS

There is a tax-station here at the frontier between Mu-mingghan (or Mingghan-jasak) and Jun-gung *hoshio*. A tax is exacted on every camel passing either from the east or the west. The inhabitants comprised five Chinese, all revenue agents. A few Mongol nomads lived in the vicinity.

From here there is no special route down to the Yellow River, one can proceed as one likes.

There is very little snowfall here in the winter, though it had snowed that year more heavily than usual. The worst heat-period was considered to be already past. Most of the caravans travelled in the winter. Farther to the west some robber bands had been in evidence; but now the countryside was quiet again. Wolves are uncommon in this part of the country, but one finds them farther to the north. Some antelopes there were, but no argali-sheep and no wild asses.

According to Siu, the Chinese farmers that came to this district had to pay close on twenty dollars a *ching*[1] (= 160 *mou*) to the *tu-t'ung* in Sui-yüan and one dollar to the Mongol district chief. But the irrigation here was poor. Everything was so dry that year that there was almost a state of famine. At the Yellow River between Pao-t'ou and Wu-yüan things were otherwise, for there the fields could be well watered. The grass there is so luxuriant that grazing horses and cattle are out of sight. Mingghan-jasak extends south as far as Wu-yüan. In this tract grain was at that time double the price it had been two months previously.

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[1] 1 ching = 6 hectares or 14.8 acres.

To the S. S. E. there were several Chinese settlers, who cultivated rye, wheat, peas etc. The settlers leave their families at home in China and stay in these places for a period, after which they return home with hides, wool and such like products. Their farming is absolutely dependent on the rain, for irrigation is impossible — the water-courses are too small.

In this place we engaged two more coolies.

Two of our camels ran away. We took a film of a Mongol who told fortunes in the shoulder-blade of a sheep. He put the shoulder-blade on the glowing embers in a Mongolian brazier, after a while taking it out to examine the cracks that had been caused. LARSON asked him if our two runaway camels would return that day. Yes, they would. The fellow even showed, by pointing at the sky, at what time they would come back.

The camels were restive on August 3rd. MENTU and I had not gone far before we saw a section of the caravan a little way ahead that had thrown their loads. But the trouble-makers were captured and had already been re-loaded as we rode past.

THROUGH LIU-TAO-KU

Half an hour later we had arrived at the little Chinese village of Hötel-khuduk (The Well at the Pass). Here LARSON had halted with all his sections except the first. One of the files had thrown their loads again — they were still strewn about on the ground. LARSON got his Mongols to unload all the camels, in order to forestall trouble on a large scale. The wildest of the beasts, that had been loaded with 250 kilograms of rice or flour (instead of the normal 180) had unburdened themselves without any help. Three camels had run away and were being pursued by riders. They were caught up and captured after a two hours' chase.

I went on ahead, however, and after a little while we were riding up a low ridge with a large and a little obo. From the crown of this hill one had an almost limitless view to the west and south-west. Our heads swam at the sight of this vast expanse of country, rolling away to the horizon in the direction of our route, and that we still had to traverse. Here was space and to spare; as far as the eye could reach stretched nothing but low hills.

The caravan route in these parts was so dead and desolate that a meeting with a Mongol on camel-back or a couple of armed Chinese soldiers on horses was an event. One exchanged greetings and put the usual questions: where from —? where to —? and whether the other party had had a good journey.

Presently we traversed a four-meter-deep erosion-bed with open pools of water in a bend. On the farther bank lay the little Chinese settlement Ta-shih-t'ou, or as the Mongols call it Budung-chölo (both names mean »Great Stone»). A couple of Chinese were just in the act of building a mud house.

Liu-tao-ku (»Six Valleys») is the collective name for the whole of this tract. The ground is riven by innumerable canyon-like ravines, only a couple of meters deep, but with vertical sides everywhere. They combined to form a main bed to the north of our route, and this main bed had its outlet to the west or south-west. Near one of these natural cuttings two Chinese were ploughing the virgin soil with oxen.

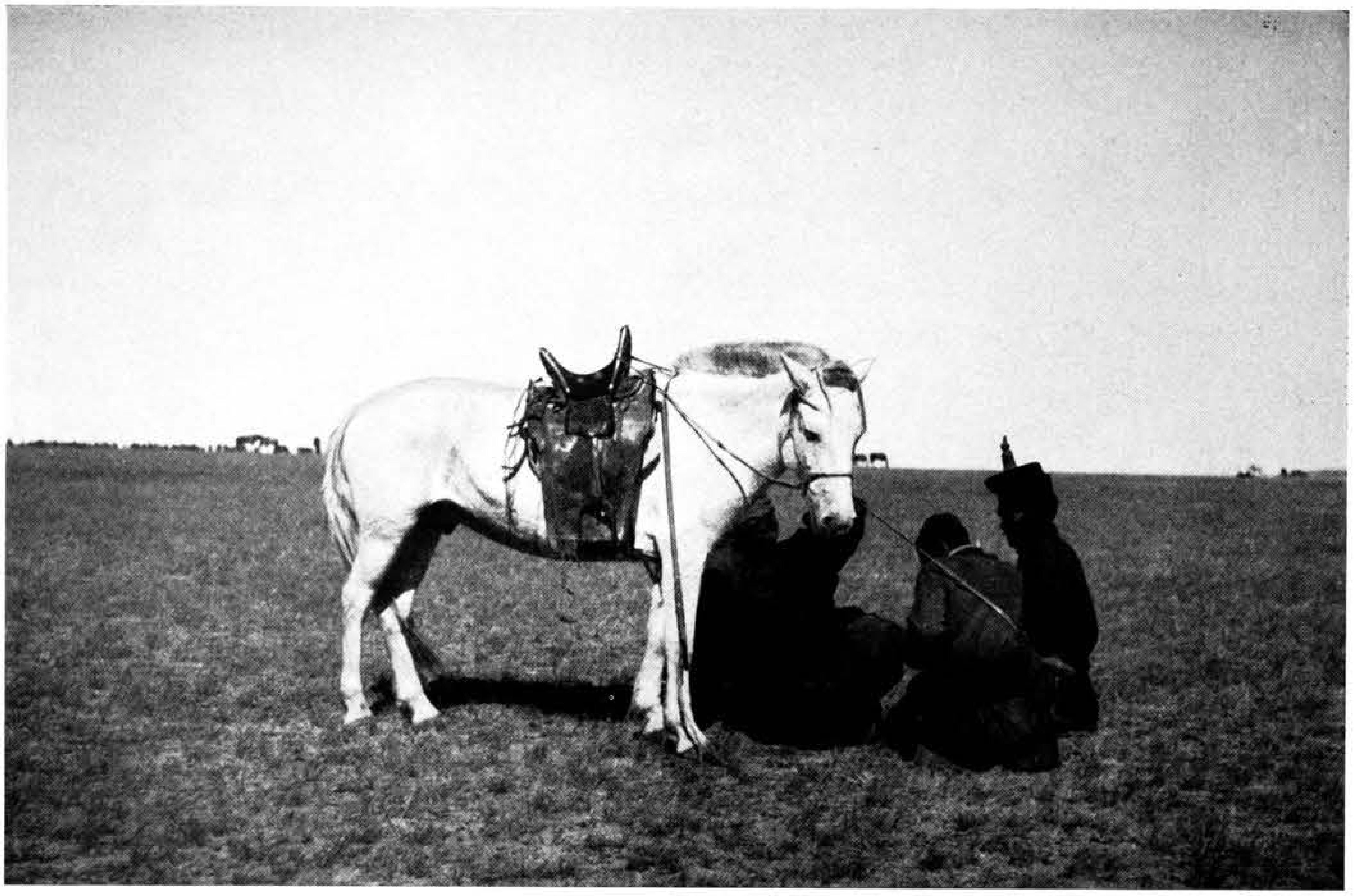
YANG-CHANG-TZE-KU

The route now followed the bank of the main bed, which has grass in its bottom and is to the north bounded by strikingly sculptured hills. It continues under the name Yang-chang-tze-ku (»Sheep-gut Valley»). Here, in the valley, a little Chinese merchant-caravan had stopped to rest. Around the tent were rows of bales containing camel-wool, straw mats and rope. A little streamlet flowed in the valley. The grass on the banks grew thick and rank. We followed the course of the valley, crossing and re-crossing the streamlet as we went. Sometimes it shrank to nothing more than a little stagnant water; sometimes it was quite dry. The valley grew sharper in outline between its flanking hills, which in some places were vertically cut.

At half-past one we passed a tiny Chinese settlement — a solitary farm surrounded by a mud wall. For another hour we followed the winding stream-bed in Yang-chang-tze-ku westwards, between its dark, nakedly cut, rocky sides. Finally we reached a bend, and climbed up on the hills of the right bank.

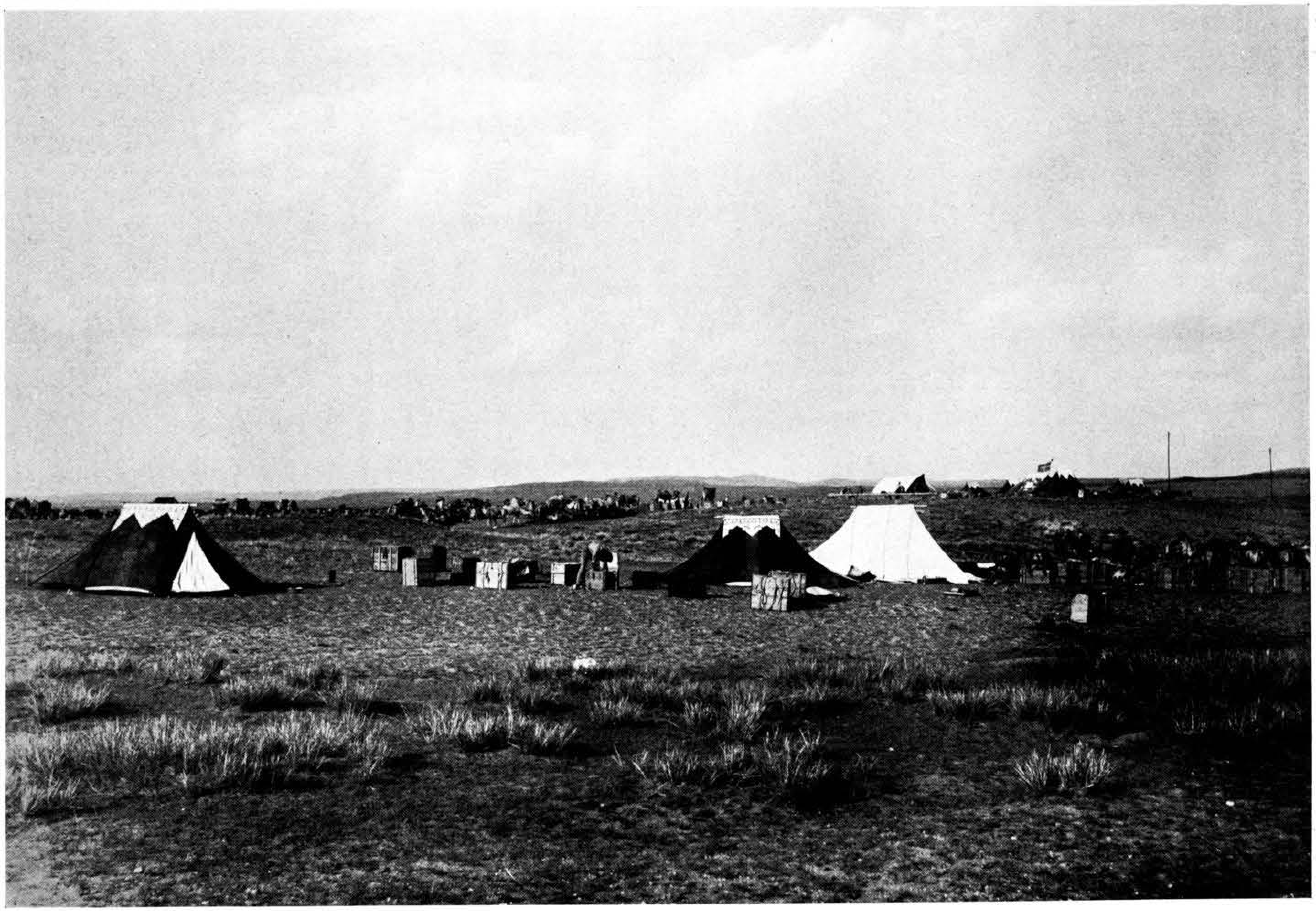
MENTU asked if we were going to rest here for the night; but when I heard that it was only thirty li (ten miles) to the next water I decided to continue. I had no-one in front of me, and I therefore decided on the camping-site myself. Generally LARSON was ahead, and it was then he who settled where the night was to be spent. He always considered such factors as pasture, water, fuel and the general condition of the camels in making his choice of a site. For me, however, the length of the day's journey was a matter of indifference. If it was short, we had the more time for work in camp. If it was long, we had progressed so much farther on our way to the Edsen-gol.

The air was now balmy and sweet, and it was a delight to ride into the westerly breeze that began to increase in strength. In the north-west a threatening storm-centre began to gather over the hills, leaden grey and heavy. We might be able to reach the promised water before it broke loose. At half-past three we crossed a twenty-five meter wide stream-bed from the north; it was dry. To the west



A beautiful Mongolian pony on the steppe *Montell Photo*

Mongolian ponies in shaggy winter-coat *Montell Photo*



Camp XIII on the Hailutain-gol

Lieberenz Photo

of the bed the country opened out to show vast plains. We were about to leave behind us the small hills that we had been travelling among ever since we left camp X at Chendamen. The Lang-shan in the south almost disappeared in the distance.

ACROSS WIDE PLAINS

At a quarter to five it commenced to rain, and a violent N. W. storm broke loose. We halted and waited. After a while the Mongol MATE LAMA, who had gone ahead to reconnoitre, came back. He had spoken with a herdsman, and found that we were near a source. We went on for another hour westwards and S. W., and MATE showed us the watering place. He and MENTU pitched my tent in pouring rain, crashing thunder and vivid stabs of lightning. We had 40.6 kilometers behind us.

Our camp was situated near the Abdarantei-gol on a wide plain with black hills of lava. We had now left the last Chinese settlements behind. One saw but few Mongol *yurts*, for one always finds these a little off the main roads.

LARSON, with the main body of wild camels and the provisions, had spent the night thirty li to the east.

From our camp, looking north-east, one could see the little monastery of Burkhantei-sume at the foot of a conical hill three or four kilometers distant. This monastery was vacant.

At ten o'clock on August 4th we were under way. HUMMEL hopped down from his camel for every flower he saw, and added it to his herbarium. The steppe is covered with quite thick clumps of the hard, high grass *tsaghan-deresun*. Here and there one sees nettles. Our botanizing doctor found further that artemisia, aster, convolvulus, iris, chive and different varieties of grass prevailed.

We traversed a dry stream-bed from the mountains in the north. It was thirty meters in width and very shallow. Forty-seven cows and two horses were browsing on the bank. A little farther on quite a large herd of horses were pasturing. The herd, clad in straw hat and on horse-back, came up to exchange greetings. He told us that the tract was called Khadain-ger. The mountains to the north were called Khadain-ul (meaning simply »Rock Mountains»).

The route was formed of seventeen parallel paths with low green bands between. Throughout the day it was much better than it had been the day before, and could easily have been trafficked by motor-car.

The blaze of the sun was filtered by light clouds; there was no wind. I rode with nothing more than a shirt, as lightly clad as possible.

Looking ahead, to W. N. W., the eye followed the rolling plain to the horizon. There seemed to be no end to it; it was like being at sea. Only to the S. W. and W. S. W. were there mountains in the blue distance. Despite the monotony, one never tires of this landscape, it is always beautiful. The eyes take a curious pleasure in devouring these vast distances from one's high look-out on the camel's back.

At half-past one we crossed a river-bed of two hundred and eighty meters in breadth. It contained several moist patches after the previous day's rain. On the steppe to the right a number of horses were browsing, and at the foot of the nearby hill we saw three yurts.

A flock of sheep told us that we were in the land of the nomads. A fifteen meter broad bed that had been full of rushing rain-water the day before was empty again. Only yesterday's clayey mud still glittered with moisture. The highest erosion-wall of this bed was four meters in height. The whole countryside, falling away gradually from the foot of the mountains in the north, had been flushed with rain-water the previous day. Now one saw innumerable deltas with lagoons everywhere. The conical delta formations were almost imperceptibly flat. The soil had scarcely a dry patch to show. The rainfall the day before must have been terrific.

MEETING WITH NORIN'S COLUMN

At the foot of the hill we saw two more yurts, and just before three o'clock, to the north of the route, we caught sight of NORIN's camp with its four tents. We rode up and were met by SÖDERBOM. There, too, were HEYDER, MASSENBACH and BERGMAN. NORIN was out among the hills with his surveyor's table. We exchanged notes about our work. They asked about the great camel catastrophe, and had it served to them in bits and pieces. We on our side enquired about yesterday's storm. It had been terrible, they said, especially between five and six o'clock in the afternoon, when it had lightened and thundered five times a second. They had never experienced anything like it. An endless succession of crashes and lightning jags. And the rain had come down in buckets. They had not been able to dig a ditch round the tents, for the ground was simply drowned with water. The well nearby had been filled with sand and gravel. And to cap all, the rain had been succeeded by hailstones as big as walnuts and so heavy that it was a positive danger to be out. They smashed through oil-cloth and formed foot-high embankments round the tents. Everybody stayed in the tents and crept under tarpaulins or felts. Everything was of course soaked, including the beds, which lay directly on the ground, and at night it had been like sleeping in hot fomentations. Fortunately, however, to-day brought fine, drying weather.

MENTU and I left NORIN's camp at the foot of the fantastically shaped and gaudy-coloured hills of lava. To the right, in the mouth of a valley, appeared the glittering white buildings of the little temple Shiretein-ganjur-sume — also called Shire-sume. The hills to the right continued into the distance, while the great plains rolled on to the left. To the W. S. W. and southwards one saw the far-away peaks of the Lang-shan. To the right were three yurts at the foot of the hill, and on the plain to the left two in one place and four more in another, while at a distance of about ten kilometers one saw the little temple Hailutain-sume.

Dusk was beginning to fall. A Chinese camel-rider caught us up and handed over a slip of paper. »Unfortunately fresh catastrophe. HASLUND's seventy-five camels bolted — also money-chests. About ten li eastwards of NORIN's camp. We have all gone out to try and get them together, but more help necessary. — HUMMEL». Happily there was a P. S. in HASLUND's handwriting: »Money-chests in safety».

We reached a very broad depression full of rather high bushes and sandy. The path wound ahead like a sand street. This depression stretches on to the Hailutain-gol, a broad shallow river-bed seeming to come from far and containing a couple of winding streamlets. At half-past seven we arrived. Our thoughtless camel-drivers were just getting their beasts to kneel, preparatory to unloading. We shouted to them to go on up on the other bank, rising six to eight meters above the bed, for we had no desire to be washed away in case a new storm should break loose. On the farther bank stood two yurts and a tent belonging to a Chinese merchant.

The curious thing about the beginning of our long journey to Urumchi was that it was not so much LARSON or myself who set the pace. This little matter was managed, and in a very superior way, by the camels. If they wanted a rest-day they simply threw their burdens and ran away. They knew that they would certainly have a holiday the next day.

Camp XIII was an important point on our march to the Edsen-gol. Here, for the last time for a long period, were assembled all the different columns of the great caravan. Here we were to work out a new plan of campaign on the basis of the experience we had gained since the start. It was now August 5th, and we had a clear survey of the whole situation.

The day was warm. After the night's minimum temperature of 18° Centigrade it was 33° in the shade. The morning's pilot-balloon had risen to 13,000 meters, with an upward drift of 160 meters.

I sent a Mongol over to NORIN, with orders to move his camp and the whole of his column over to us.

CONFERENCES IN CAMP XIII

The whole day was taken up with important conferences. The first took several hours and took place in SÖDERBOM's big white tent, where he, NORIN and BERGMAN slept together. For an old mapper like myself it was a pure pleasure to look at HEYDER's three enormous charts with their complicated system of triangles in all forms and sizes. As fixed points HEYDER had used every single obo to be found in the vicinity. These obos formed a point on dominating hill-tops and heights that could always be clearly seen with the theodolite. Where there was no obo a stone cairn had been built, often as much as two meters in height. The angles between these points were then measured and checked. The whole thing grew into a permanent net of triangles, needing only a couple of astronomically determined points to be able to be inserted in its right place in the geodetic net.

Triangulation, however, is a lengthy business, and we calculated that the surveying work that had now gone on since July 1st would keep us, if it were continued all the way to Ghashun-nor, rather too long in these tracts. I reckoned six weeks' march for the main caravan to this lake; and I now placed a period of nine weeks at the disposition of our topographers. HEYDER needed a month and a half to carry the triangulation as far as the monastery Bayan-shandai-sume; and after a thorough discussion of the matter it was decided that his work should for the present stop at that monastery.

We sat for hours in the magnificent tent of the three Swedes, turning over sheet after sheet of maps. We argued, discussed, compared notes and measured with compasses. I showed my maps of the route to this camp, and HAUDE and DETTMANN explained the astronomically determined points. NORIN's maps were regular masterpieces, with their hypsometric contours and the geology in colour.

The topographical work was thus to proceed in a simpler form from Bayan-shandai-sume onwards, and NORIN and his column were to be given three weeks to finish the route between the monastery and the lake. In case it should prove necessary he was free to prolong this period. I should in any case await their arrival at the Edsen-gol, where we had more than enough to do for an indefinite period.

In the afternoon I had a conference with HAUDE, DETTMANN, HEMPEL, NORIN and LARSON on the subject of staff distribution at the stations, particularly at the Edsen-gol, where we should soon enough be arriving. NORIN declared that he could not do without the splendid help he had in HEYDER and MASSENBACH in making the maps both detailed and exhaustive, and he begged to be allowed to retain them as long as possible. The original idea had been that HEYDER should be put in command of the Edsen-gol station. Now, however, we had to look about for other likely persons for this post, and our choice fell upon ZIMMERMANN and MARSCHALL V. BIEBERSTEIN.

It was further decided that Professor SIU should write to YUAN, who was not very far away, and ask him to come over to our camp to discuss his work on the way to Ghashun-nor and the allotment of work at this lake.

BERGMAN, who had discovered various prehistoric sites on the way, now made rich finds of small elegant flint objects: arrow-heads, knives, scratchers, drills, flakes and cores, which he brought and demonstrated for me.

The site of our present camp had evidently been a small centre, in Han time, perhaps a fort or an intermediate station on a highway. There were numberless potsherds and bricks, and a whole little brick platform that was dug up by HUANG and CHUANG. It was surrounded by about a hundred bricks bent at an angle. Coins from the period of the Han dynasty were also found. The Chinese were deeply interested in these finds, and carried on simultaneous digging operations in several places.

Finally I instructed LARSON to proceed the following morning with his usual caravan and the wild camels. I was up betimes and witnessed their departure. His staff included WALZ, LIEBERENZ and MÜHLENWEG.

NORIN, HEYDER, BERGMAN, MASSENBACH and HEMPEL measured out a new base-line in order to check the triangulation. With the aid of the triangles they arrived at the figure 2,504 m. and for the same line with a measuring tape 2,491 m., thus showing a difference of only thirteen meters, a result that caused general satisfaction. There had been the greatest excitement about this result, but our topographers were now easy in their minds.

At two o'clock on August 8th ZIMMERMANN and MARSCHALL arrived with their caravan of twelve camels. They and the student LIU were all in splendid health. The little antelope had travelled in a padded and mattrassed wagon-lit in the form of an empty box. He too was in the pink, and had not suffered in the slightest from the long journey from Camp VIII.

An hour later YUAN arrived alone on camel-back, and together with him and SIU PING-CH'ANG I had a long conference. He was very pleased with his results, and showed his tastefully and well drawn maps, which were now so far advanced that they could be connected up with NORIN's and HEYDER's.

EXPEDITION BREAKS UP AGAIN

At Camp XIII our ways parted again for some time. NORIN, HEYDER, BERGMAN, V. MASSENBACH and TING were to continue with their work, coming after at a slower pace than we. YUAN was to hasten on his work and arrive at the Edsen-gol within seven, or at the most nine, weeks. HUANG and the digger CHUANG, at their own request, were to stay behind for three or four more days to continue their excavations at Camp XIII. The rest of the staff were to follow me on the journey westwards.

Not until eight o'clock on August 9th did we set off from camp XIII, where we left NORIN's, YUAN's and HUANG's parties behind. Once started, we rode rapidly over a long slope between two low ridges. On either side of us were erosion-beds, beginning right in the middle of the steppe and with vertical canyon-like walls from the very outset. In the north we were leaving the little monastery Engger-sume and a couple of yurts behind. Here and there herds of cattle were grazing. Far ahead to the west were visible blue mountains. By the wayside an old man sat alone, twirling his spindle. On our left rose a lonely and striking mountain shaped like a sarcophagus, the flat top of which was crowned with a great obo; this was Khongkhor-obo.

At our last camp wild onions grew in profusion, and the whole countryside emitted their peculiar tang, especially after the last rain. The camels loved this plant, and their breath, never fragrant, is worse than usual after a generous meal of wild onions.

On the bank of the brook Khongkhorin-gol, in which there was running water, we made a halt after a short march.

On the morning of the 10th we awoke to the sound of pattering rain. The landscape here took on another character. The steppe was everywhere covered with innumerable hemispherical clumps of vegetation, half a meter in diameter. It is the roots of these small, spiny bushes that bind the earth and sand and give rise to this curious, knobby form of landscape.

Time and again we passed the skulls and skeletons of fallen camels — milestones that mark the path of caravans, and of life and death through Asia.

A little way to the side of the route appeared an obo, and near it a yurt and a tent. To the south-west the little white monastery Ded-shilin-sume glittered on the plain. Behind it rose bold mountain formations, the most striking we had so far seen.

Presently we passed two Chinese tents and a rope-maker, with work in full swing. We halted for a moment and were informed that it was a merchant caravan that had left Hsi-ning three months previously with fine Tibetan sheep's wool on the way to Pao-t'ou. From this spot there was a direct route to Pao-t'ou, passing to the south of Khongkhor-obo. To the right extended the endless steppe, with no mountains to obstruct the view. On a little hill a group of horses browsed lazily. They know from experience that they will not be tormented by flies on the wind-exposed hill-tops.

We pitched camp at the well Khashiatu, or, as the Chinese say, Hashatu.

On the still evening air was wafted the sound of caravan bells. The melodious and solemn clanking came nearer, with a suggestive and seductive charm that drew us down to the road as if by magic. One glimpsed the first camels, led by their puller on foot. New shapes appeared, now moon-lit, as they approached, now like black silhouettes, as one saw them against the moon. It was two caravans, travelling in company. The first came from Lama-gegen, a new and growing commercial centre in Outer Mongolia and situated about as far from Urga as from Uliasutai. It had been already twenty-six days on the way, and the leader complained that they had had to pay a thousand dollars in revenue for their goods (sheep's and goat's wool and hides). Outer Mongolia was at that time visited with cattle-pest and drought, a natural consequence of the fact that the GEGEN HUTUKHTU, the incarnation in Urga who had died two years previously, had as yet no successor. Now they were on the way to Beli-miao, where they were going to enquire whether one might continue to Kuei-hua without the risk of attack by robbers.

The other caravan came from Ku-ch'eng-tze (Guchen). The owner was himself travelling with the company. He rode in a covered cart drawn by a camel. The equipage looked curious enough in the pale light, and the cart went creaking past among the silent steps of the camels.

We found next day that the caravans of the night before had encamped a little below us in the valley. The old man in the cart had heard that we had a doctor with us, and at daybreak he had himself carried to our camp by four men on an improvised bier. He had swollen knees and a scorbutic condition of the gums. He was duly treated and then carried back to his camp to continue in his cart to Kuei-hua.

By eight o'clock it was already warm and the sky brilliantly clear. There was a lovely breeze to counteract the burning sun on our backs. We crossed a belt of low hills and ridges, the highest of them provided with an obo. Although this was one of the highest points on our way from the Khujirtu-gol to the Edsen-gol one scarcely noticed it, as the climb on both sides of this flat pass is very gradual.

BEGINNING OF THE WINDING ROAD

At the bottom of the slope the way divides. The right-hand road, which is an old caravan route called The Small Road, leads up into Outer Mongolia to Uliasutai; the left road, that we followed, swings off somewhat to the south and is called The Winding Road.

Travelling over a plain bordered by hills we reached the defile at Murguchik. Here are assembled all the river-beds of the countryside; and in the narrow but short valley the grass luxuriates on the banks of a little streamlet which soon runs dry. The hills fall rather steeply to the bed of the valley.

We pitched our tents in the grass. The camels looked really imposing as they wandered about browsing in the luscious grass with the dark walls of the valley as a background. While we were eating lunch a merchant-caravan on the way to Liang-chow passed by.

At Murguchik we found ourselves quite near the spot where the DUNDA GUNG (The Middle Duke) had set up his yurts. The only politeness we showed him was that SIU and I sent him our visiting cards. This ruler is not exactly famed for his hospitality to foreigners, not, at any rate, the one who was ruling here in 1900. It was in his district that SJÖBERG (SEEBERG, a Swedish American), the sisters HILDA and CLARA ANDERSSON and Miss LUND, the missionaries of the Swedish Mongol Mission, were murdered. The deed was, however, probably carried out at the orders of the Boxer leaders. The year before we arrived, the Middle Duke had confiscated four Russian motor-cars loaded with ammunition. FENG YÜ-HSIANG, who was at that time waging war in the tracts to the south of this place, sent a detachment of two hundred men to regain the motor-cars; but these soldiers are said to have met a sad fate.

Leaving the short valley behind us we came out once more on open ground, over which we now directed our course to the south-west. To the north-west, at a considerable distance, one saw the temple Bombin-sume (Bombotei-sume). Formerly it had nine hundred lamas, who owned several thousand camels. Now it was inhabited by a mere twenty monks, desperately poor and complaining of the bad times and the persistent drought. We noticed but little of the latter, however; it had rained only the previous day.

THE TIGER VALLEY

A little later we reached hills, where the route led up a river-valley called Lao-hu-ku (Tiger Valley). It was sterile and desolate, filled with boulders of all sizes, but picturesque withal in its desert loneliness and wildness. The valley led up to free, open spaces on the Tiger Mountain, where ten antelopes bounded off, light and elastic, at our approach. We crossed a granite ridge, and paused for a moment on the crown, struck with astonishment at another of those endless panoramas that spread out before one from time to time. Far in the west the earth and the sky seemed to merge into each other in a melting haze.

Elegant and elastic, HASLUND sped past on his slim riding camel. Our Danish friend was really ubiquitous. As LARSON led the big provision column, HASLUND managed my section. The Mongols liked him very much, but then he had lived among them for about four years and knew their habits and customs.

Having discovered the position of the well Durbeljin, he came riding back to the caravan, and we camped at this »square well».

MEETING CARAVANS

On August 13th an east wind was blowing. It is from the east that the rain comes — from the sea. The chains of mountains to the south are called Khara-narin-ula on the map; the Chinese name is Lang-shan. This chain lies immediately to the north of the Huang-ho's great bend.

At Dal-ulan there is a well for the thirsty and a huge obo of stone on a flat hill for the spirits. The obo had perhaps been erected as a protection for the well and to keep its supply of water constant and fresh.

A young Mongol in a blue robe came riding by on a snow-white camel. Both were supple and well-grown; he sat between the humps as if he had grown there, following all the camel's movements with an effortless ease. He was a beautiful sight on the bare, grey steppe, and polite and friendly in his speech and manner. I should have liked to have taken him into my service — but he did not serve: he was proud, and looked like the son of a prince. He vanished as swiftly as he had appeared, his camel seeming to fly over the steppe.

An approaching caravan became visible in the distance. It came nearer, and seemed to grow larger: five Chinese were leading ten camels, doubtless loaded with opium. As they passed by each scrutinized the other curiously; such meetings are always a change. The usual greetings were ecxhanged. »All well? — Where do you come from? — From Kansu. — Where are you bound? — For Kuei-hua.» There was no time for further questions, for they had already gone by. These desert meetings remind one of passing ships that meet on the open sea and send each other a greeting over the waves.

Skeletons of fallen camels were so common that one ceased to think about them. In the space of two hours I counted as many as ten. Nearly all of them were from last winter and spring. They cannot for long resist the disintegrating effect of the atmosphere, cold, heat, rain and wind. Gradually they crumble and disappear. If they lay for decades the route would be literally paved with bones and skulls. Skeletons are the wrecks of desert ships. They are swallowed up by the endless desert sea. So it has been for thousands of years — the desert remains the same, but the living ships are renewed generation after generation. When they have served their turn they are wrecked and die on the path where others will see their bones whitening in the sun.

Presently we passed a *mai-mai* (as the trading stations of the Chinese merchants are called). Under the straw mats outside the tents are piled heaps of grain. This is where the opium caravans from Ning-hsia and Wang-yeh-fu stop to rest. They travel a hundred li a day, each day being divided into two stages, morning and evening. In order to be able to make such long marches they must look after their camels well, and feed them. The members of the caravan have rifles and Mauser pistols and can defend themselves against robbers.

At Deresun-khuduk (Grass-well) two Chinese were watering about seventy camels at a stone trough that was filled with a canvas bucket.

Continuing on our way, we soon came to a village consisting of seven yurts; and just beyond we could see LARSON's tent. The name of the place was Khara-tologoi, or, strictly speaking, to distinguish it from numberless other »Black Heads», Chendamen-khara-tologi. Cheerful and genial as always, my splendid caravan leader came to meet me, and in a short time afternoon-tea was served.

In the middle of the night I was woken up by three revolver shots and a frightful shrieking among the tethered camels. »Aha, an attack by robbers!» was my first thought; but as nothing further happened I went to sleep again. In the morning I was told that a dog from the village had slunk into MARSCHALL's tent and drunk out of the antelope Dicky's milk-bowl. Dicky had fled, pursued by the seven dogs of the village, in their turn chased by Hami and Yoldash. MARSCHALL had also rushed out to save Dicky, his favourite. The antelope dashed in among the camels, who took fright. MARSCHALL himself said that according to the regulations he had called out »Wer da?» three times before firing into the crowd of dogs. No one was hurt, however, and everything became quiet after the shots.

On the morning of the 14th, balloon no. 100 was sent up, though it did not mark the occasion by establishing any height record.

The route led between irregular hills and over open spaces till we came to a winding valley between steep or vertical mountain walls. Here purled a dwindling little brook called Tsaghan-gol. We passed a grave on one of the banks. Time and again we crossed the bed, before finally leaving it to turn up a tributary valley that led us out on to open ground again. Six hours later we had reached our camping place for the night.

We took supper on bast mats near the kitchen. Just as we had settled down with crossed legs to begin, Dicky came bounding in among plates and dishes and stepped right in the middle of the beans. I could not help sighing with relief that the camels were not equally familiar.

I cannot imagine anything more splendid than to build my airy habitation in a different spot every day, and to study the earth's surface, not in a text-book but in reality. And then, however instructive the day has been, evening always comes as a solace and a relief.

We resumed our westward journey over the bare steppe, traversed by dry ravines and bordered by desolate hills. In the hilly ridge to the right of the route was a gap, a pass, giving a wide view to the north. I was involuntarily reminded of The Golden Gate, through which one gazes out over the endless waters of the Pacific. Here it was Sha-mo, the Sea of Sand, Gobi, the great desert, whose vast and desolate spaces in the north faded into blue infinity like a sea.

REACHING SHANDE-MIAO

At a great distance, W. S. W., one saw , on August 16, a gigantic white *suburga* or *stupa* at the famous lama monastery Shande-miao, the Bayan-shandai-sume of the Mongols, which is considered to be half-way between Kuei-hua and Ghashun-nor.

Some merchants lived by themselves in nine yurts beside a dry river-bed to the east of the monastery. We rode past this »mai-mai», and went on till we reached a low plateau where LARSON had encamped; and here the new tent community gradually grew up.

Just after three o'clock the wind increased to a regular gale. The fine dust sifted in through the canvas of the tents. Inside, everything was covered with fine sand. The bed, the mat, chests and boxes — all were covered with a yellow layer, and the washing water soon looked like pease soup. One could not make out a single feature of one's surroundings; one saw nothing but yellow, swirling dust, mantling even the nearest tents from view. The wind already had a velocity of twenty-four second/meters. The temperature rose only to 23° Centigrade. According to HAUDE the storm extended to five hundred meters above the surface of the earth.

From Pao-t'ou we had travelled 473.7 kilometers, leaving 420 to theEdsen-gol. We had been told that at Shande-miao there was a tax-station where one had to pay five dollars on every chest. However, not a word was mentioned about taxes, and we did not pay a cent. We were advised not to hold too hard to the north on our march westwards, as otherwise we might fall into the clutches of the tax-gatherers of the Mongolian Republic. The nearest republican tax-station was situated only 120 li to the north of our present camp.

We were obliged to stay for a couple of days at Shande-miao to rest and pasture the camels; we had also to re-pack and select the chests to be left behind for NORIN's and YUAN's columns. This place was not so bad. From the Chinese merchants one could buy candles and matches and a number of other such trifles. We were at an altitude of somewhat more than 1700 meters above sea-level, and at night the temperature sank to +6° C., so the climate was good.

The first day was largely taken up with clearing up after the dust-storm. Everything had to be beaten and aired. LARSON, MARSCHALL and HASLUND attended to the question of provisions. Four of the Chinese coolies who had been taken on at camp IX were discharged, and two others were enrolled.

On August 20th we were caught up by HUANG's little caravan. He had stayed behind for four days at camp XIII at the Hailutain-gol and dug up seventy objects of bronze, mostly arrow-heads, one hundred and seventy iron objects and twenty of bone, as well as Han coins. He told us also that BERGMAN had discovered some fine stone-age dwelling sites since we had left the camp, with rich inventories of worked flint tools.

From the merchants at Shande-miao we had heard that one could travel down to the bend of the Yellow River in two days. I made a few calculations and came to the conclusion that it would be of value for our mapping work to connect up with the great bend of the river. On the morning of the 21st I instructed LARSON to get together a light little caravan, at the same time giving HEMPEL and ZIMMERMANN a program to carry out and a number of commissions. With the students LIU and MA as interpreters they were to betake themselves to the nearest

Belgian mission station to make certain enquiries. They were also to make a map of their route. This small party set off in the course of the afternoon on August 21st.

Like myself, **Haude** was longing to have meteorological station no. 1 at Ghashun-nor ready as soon as possible, and he asked to be allowed to set off with his little staff and his instruments together with **Larson**, who was to start on the 22nd. Our ranks were therefore further thinned by the absence of **Haude**, **Dettmann**, **Kaull** and **Li**. **Huang** also had asked leave to go with **Larson**.

SICKNESS AT SHANDE-MIAO

At Shande-miao I was on the sick-list for a few days. I had got a touch of my old gall-stones, and had to submit to a regular treatment by Dr **Hummel**, who administered morphine and other wonderful drugs. He also prescribed a few days in a properly made bed, with sheets — a luxury that I had not enjoyed since we left Pao-t'ou.

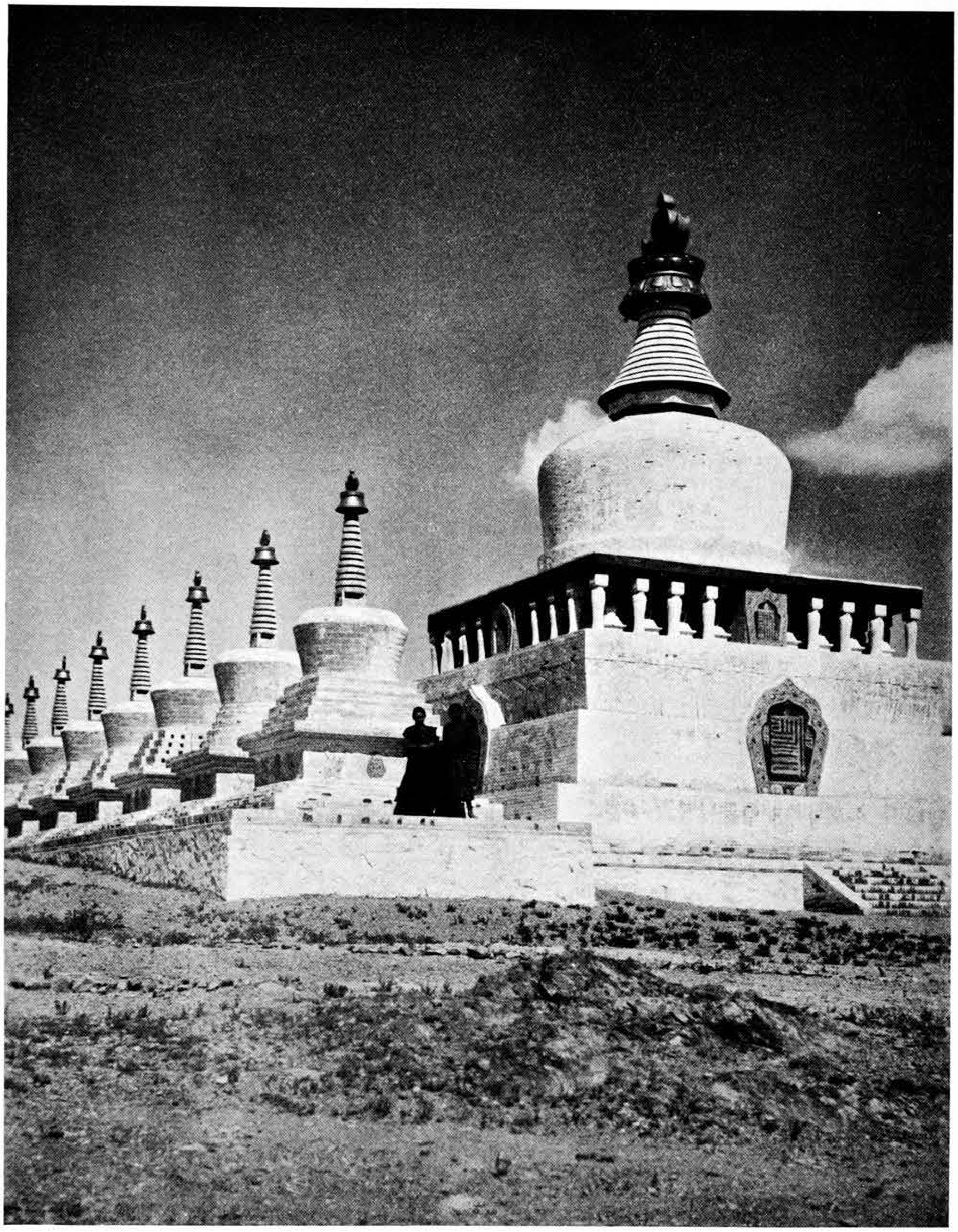
On the mat in my tent lay Hami, who had been bitten in one paw in a wrangle with the monastery dogs. He was therefore also one of **Hummel**'s patients. His paw had been bandaged, to his great chagrin. Hami and I were like a couple of sick old dogs.

A high lama from the monastery came to express his sympathy; and another, who was invested with the dignity of a judge, was also entertained in my tent. Professor **Siu** very amiably came to visit me three times a day, sometimes remaining for an hour or two. When I was alone I lay and read, amongst other things, **Pelliot**'s excellent essay in T'oung Pao, which he had sent to me in Peking: »Voyage des MM **Gabet** et **Huc** à Lhasa». I also read lighter things, such as »Skibet gaar videre» by **Nordahl Grieg**. This very likable young Norwegian had visited me in Peking early in the spring. It was in this book that I found these golden words: »And you know that there is something that is a thousand times greater than to be a mere male, and that is what a mere male never is: a man. A fearless, open-eyed will that does not fling more dirt into the world than it already contains».

We had taken a young lama into our service. He worked well and was willing, had an alert and agreeable appearance and, something that is as rare among Mongols as it is among human beings generally, he had an exceedingly graceful carriage.

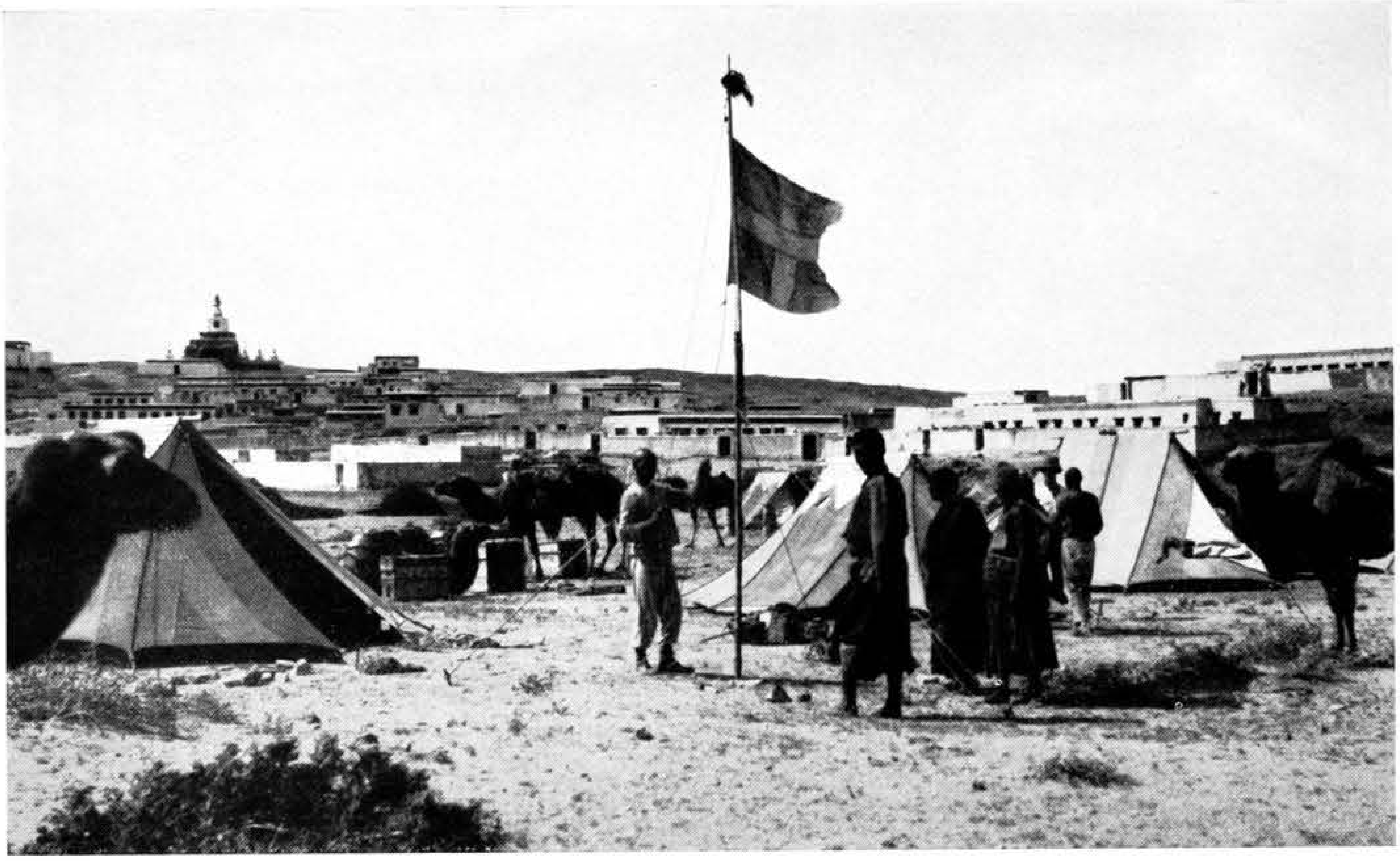
THE MONASTERY

On August 26th we decided to shift the camp to the monastery itself. The monks begged us not to pitch our tents on the top of the hill above the sacred edifice, but in the sand-bound valley below it.



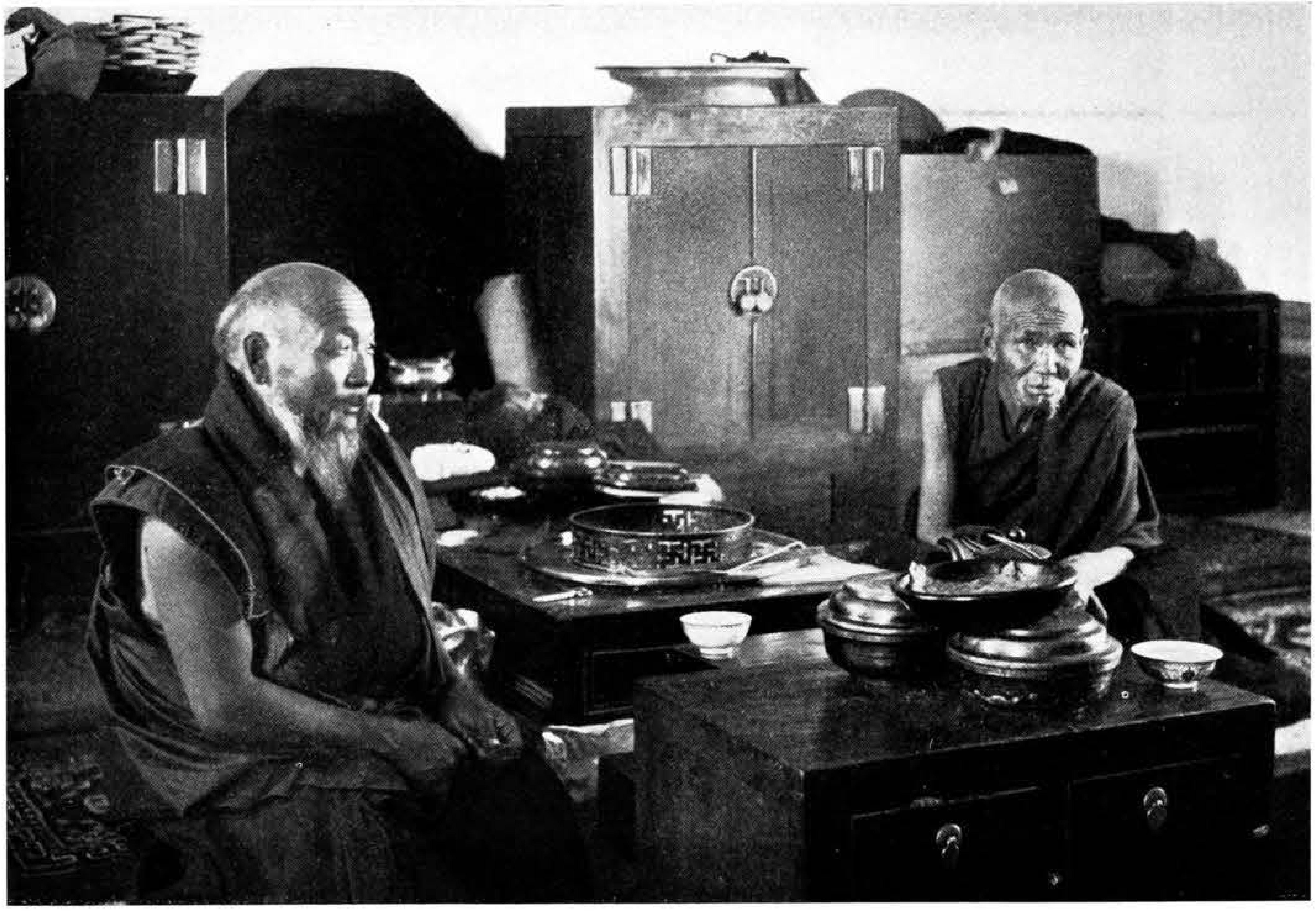
Lieberenz Photo

The suburgas at Bayan-shandai-sume (Shande-miao)



Our camp in front of the temple-town of Shande-miao

Hempel Photo



Two high lamas in their quarters, Shande-miao

Lieberenz Photo

The view of the monastery- town in the north was glorious. The fifty odd temple-buildings and dormitories were erected in the form of an amphitheatre on the slope.

Professor Siu, Haslund and I, together with the Mongols Tserat and Mentu, went to the monastery to pay a return-visit to the lama who had visited me. He was out on a priestly mission among the nomads in the vicinity. We were therefore conducted to the abbot himself. He was a little old man with a round head and wrinkled features, and sat with crossed legs in his well furnished little room, surrounded by a whole army of gilded or painted divine images. He did not return our greeting. He only looked surprised and taken aback, and seemed to want to get rid of us. When we had gazed at the little old man for a short while, therefore, we retired.

Instead, we made our way up to the magnificent temple-building on the crown of the hill, where a handsome row of small *suburgas* or *chortens* stand, with a white giant-suburga immediately behind them. A lama went to the temple entrance and ignited incense in a metal vessel before the door, afterwards taking his place on a cushion in the right short side of the room. In front of him, on a red-lacquered table, he had sacred pages, from which he read aloud in a singing rhythm, accompanying himself by clashing the cymbals he had on his lap and beating a hanging drum with a vertically held drum-stick shaped like the neck of a swan with a ball at the end. Occasionally he tinkled a little bell that was standing on the table, which was, moreover, also littered with a *dorje* and other ritual objects. It is possible that these ceremonies were intended to placate the gods in their wrath at our unwelcome visit.

The roof of the rectangular hall of the temple was supported by four red-lacquered columns, between which hung four uncommonly beautiful *tankas* or religious paintings. The short walls were decorated with paintings in red frames, while the back wall was taken up with shelves for sacred volumes and some decorative Buddha images in miniature shrines with glass windows. In the middle of the floor stood a model of a *suburga*. The altar table was cluttered with brass bowls and sacrificial gifts, and before it, in the centre of the hall, hung a canopy of cloth.

We wandered along narrow alleys between white walls, up natural steps in the hillside, over courtyards and open squares — just as in Tibetan temples and monasteries. The architectural style is Tibetan, even though some roofs, decorations, wood-carvings and paintings are in the Chinese style. Bayan-shandai-sume is picturesquely situated on its slope. At the foot of the slope runs a narrow valley. From the well in the bed of the valley water is fetched by means of a scoop made of sacking, which is emptied into a wooden trough. Just as we passed by some horses, a donkey and a camel belonging to a blue-clad Mongol from Kuku-nor were being watered at the trough. The whole scene made a beautiful picture in the warm, red glow of the setting sun, and with steel-blue, threatening storm clouds to the north.

A number of lamas came to visit the camp and wandered between the tents in wondering groups. Clad in dirty red togas that left their copper-brown arms bare, they sat and gaped, full of astonishment at all they saw. Our dogs had their work cut out keeping track of riders, pilgrims and monastery dogs. Dicky had to be locked up at night, for he had a heroic little temper that prompted him to fling himself into the thick of the fray whenever there was a dog-fight going on.

REPORT OF THE HUANG-HO EXPEDITION

On the evening of August 26th HEMPEL, ZIMMERMANN, LIU and MA returned from their tour to the Huang-ho valley. They brought the most wonderful watermelons with them, having purchased as many of these as their camels could carry. They had also cabbages, beets, potatoes, corn-cobs, radishes etc. — all things that one regards as very much of a treat in the interior of Mongolia. The distance as the crow flies to the Catholic mission station San-tao-chiao, where Père HILAIRE RODTS, the Belgian missionary, resided, was 57.9 kilometers S 56° E. I will give here a short résumé of the report of the two German majors.

On August 21st they had ridden with their little party in a south-easterly and southerly direction to the Lang-shan, that from the north appears insignificant enough, most resembling a low, hilly country traversed by several valleys. The route sloped slowly down into a valley, where at a Mongol station they were questioned as to their business and their destination. The country was strongly sandbound in these parts, and there were heaped sand-dunes to a height of ten or twenty meters. There were a few deserted old houses, evidently abandoned on account of the sand.

The narrow valley was shut in between black, naked rocks. The party camped here near a Mongol yurt and a tent beside a little stream.

The following day they proceeded in a south-easterly direction towards a pass, while the valley continued southwards. The way up to the pass led over the dunes. On the crown stood an obo with a Tibetan inscription carved in wood (Dabatein-obo). The climb from the north was steep, to the south more gradual — one would have expected the reverse. The valley was not without a certain romantic beauty, shut in as it was between bare rocks and covered with some vegetation and even with a few odd trees. Somewhat farther down it curved round to the east. In one place they came to a great sand barrier, a gigantic dune, with a downward grade to the east of 35°. At the eastern foot they found springs filtered by the sand. The dune was thirty meters in height.

Winding and narrow, and squeezed in between precipitous mountain-walls, the latter two hundred and fifty meters high on the right-hand side, the valley continued downwards in the direction of the plains of the Huang-ho. Old fortifications and walls could be glimpsed here and there on the rocky heights on either side. The valley was so narrow that its little stream took up most of the bottom, and one splashed along the bed in the water. The mouth opened towards the south-east, and on the south side of the exit was a stone fortification wall one and a half meters in height and thirty meters in length. From the foot of the Lang-shan one has a magnificent view over the Huang-ho valley.

They rode on eastwards, over the alluvial fans at the foot of the mountain, over small dunes — and finally reached the first settlement, where the sand-dunes came to an end and the country had more vegetation to show. To the south stretched a belt of bound dunes. Crossing a canal, that happened to be dry, they pitched camp at a place called Sain-nor. Here were three little newly erected farmsteads, and several others could be seen in the distance. The farmers cultivated wheat, millet, hemp, melons, potatoes, cucumbers, beans, cabbages and all kinds of greens, and maize. For the right to farm here every settler had to pay fees both to the Mongols and to the authorities of Sui-yüan.

The fauna in these parts includes antelopes, hares, pheasants, partridges, foxes and wolves. Vultures, swans, wild ducks and geese are common. The domestic animals are camels, donkeys, sheep and goats.

According to local information, the first frost may be observed as early as September 8th, and August 24th is regarded as marking the end of the summer. September and October is here the loveliest season of the year. In January the temperature in San-tao-chiao sinks to — 20° or 30° C. There is but little snow in winter. The sand-storms begin in the month of March, and come from the west. The ice on the river is as much as two meters in thickness. The break up of the ice in spring is followed by floods. The work in the fields begins on April 4 th or 5th, and is finished in October. The wet season comes at the end of July and the beginning of August, but the rainfall is not heavy. In June it is only eleven millimeters, in July thirty. Fogs occur practically not at all. The Huang-ho is frozen over from December to March. Navigation is possible from April to November. Transport takes place on rafts floated on hundreds of sheep-skins, the latter being either inflated with air or stuffed with wool. Three tents can be erected on such a raft. Huang-ho fish are most easily caught in the canals, where one also finds turtles.

The Chinese merchants take up their position at the foot of the mountains to which the canals flow. On these waterways are transported flour, grain, coal etc., which are exchanged for hides and wool from Mongolia.

HEMPEL and ZIMMERMANN crossed one of the largest of these canals with their party. It flowed from the south-west to north-east, was fifteen meters across and 1.6 meters deep. The rate of flow of the current was 1.5 meter per second. It extended to quite near the foot of the mountains where the Huang-ho had its course two hundred years ago. But the bed of the river has shifted further and further south. The Chinese settlers have advanced so rapidly here that in this originally Mongol country they already out-number the Mongols by a hundred to one.

On August 23rd the little party turned eastwards. They had to go round several canals that measured only one meter across, half a meter in depth, and with banks of about thirty centimeters in height. Settlements grew more and more numerous as they advanced. One of these boasted a brick-kiln and barracks with Kuomintang's blue and white flag. The irrigation canal at this place was three meters across. After this, sand-dunes alternated with grass-grown clay country.

To the right of the road stretched a long, ten meter high sand-dune at the eastern end of which they found the monastery Meiling-miao, two hundred years old and inhabited by a hundred and thirty lamas. Beyond the monastery they had to cross a fifteen meter wide canal, Yang-chia-ho-tze. There is a ferry at this point, that is drawn across with a cable. It took an hour and a half to get the camels over, and it was only with great trouble that they could be induced to step on to the ferry at all.

On the other side of the canal lies the village San-tao-chiao with its four hundred inhabitants and barracks lodging a company of one hundred soldiers, most of them quondam bandits. Their leader was WANG YING, of whom we had heard in Pao-t'ou, and who was said to reside in Wu-yüan.

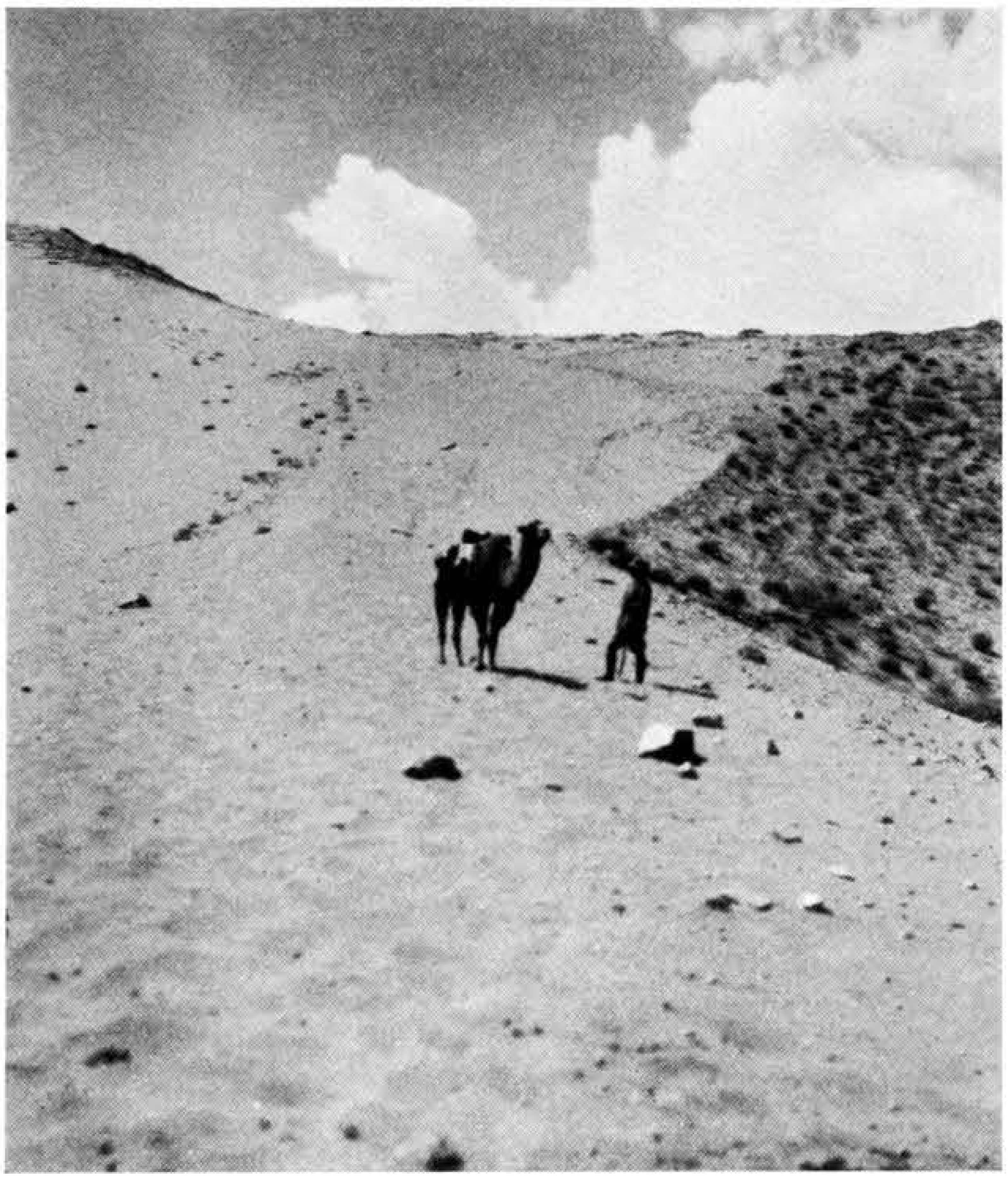
The canal runs from S. S. W. to N. N. E., and is said to be one hundred and eighty li in length. It had been for generations under construction by the family YANG, from whom it had also received its name. The work was begun a hundred years ago and the canal was completed in 1917. The YANG family resides in the village Yang-kuei, thirty li to the south.

The Belgian mission station lies in the eastern part of San-tao-chiao. It is surrounded by a three meter high wall with look-out tower, embrasures and reinforced gates just like a fortress. In the four year old station our travellers were hospitably received by Père HILAIRE RODTS, with whom they spent the night.

E. N. E. of the village and visible from there lies the little town Shan-pa-t'ang; it reckons seven thousand inhabitants and has barracks and a Belgian mission station. In this part of China there are thirteen Belgian mission stations. The distance to the present bed of the Huang-ho is ninety li.

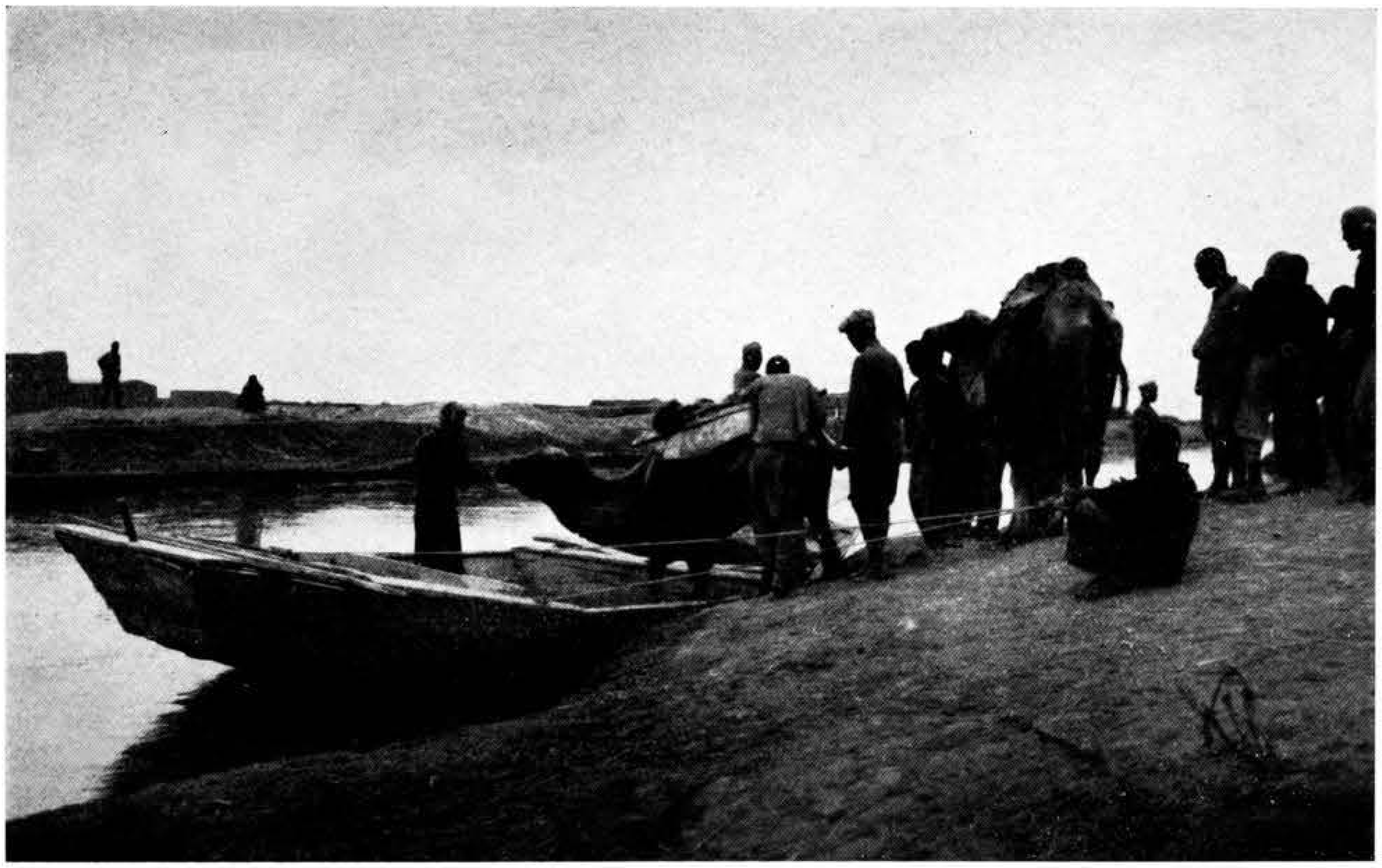
On August 24th the party set out on the return journey. On the first day's march they followed the same route as on the outward journey, but thereafter they kept westwards of their former route and rode past the monastery Nar-sume. They skirted the mountain-foot of the Lang-shan and found that the old Huang-ho bed is clearly distinguishable though insignificant. After doubling round a headland they turned N.N.W. and proceeded up a narrow glen with a brook, beside which they pitched camp.

On the last day they rode northwards in the same glen, which is called Budungmodo and is cluttered with sand-dunes. In one place the valley was blocked by a

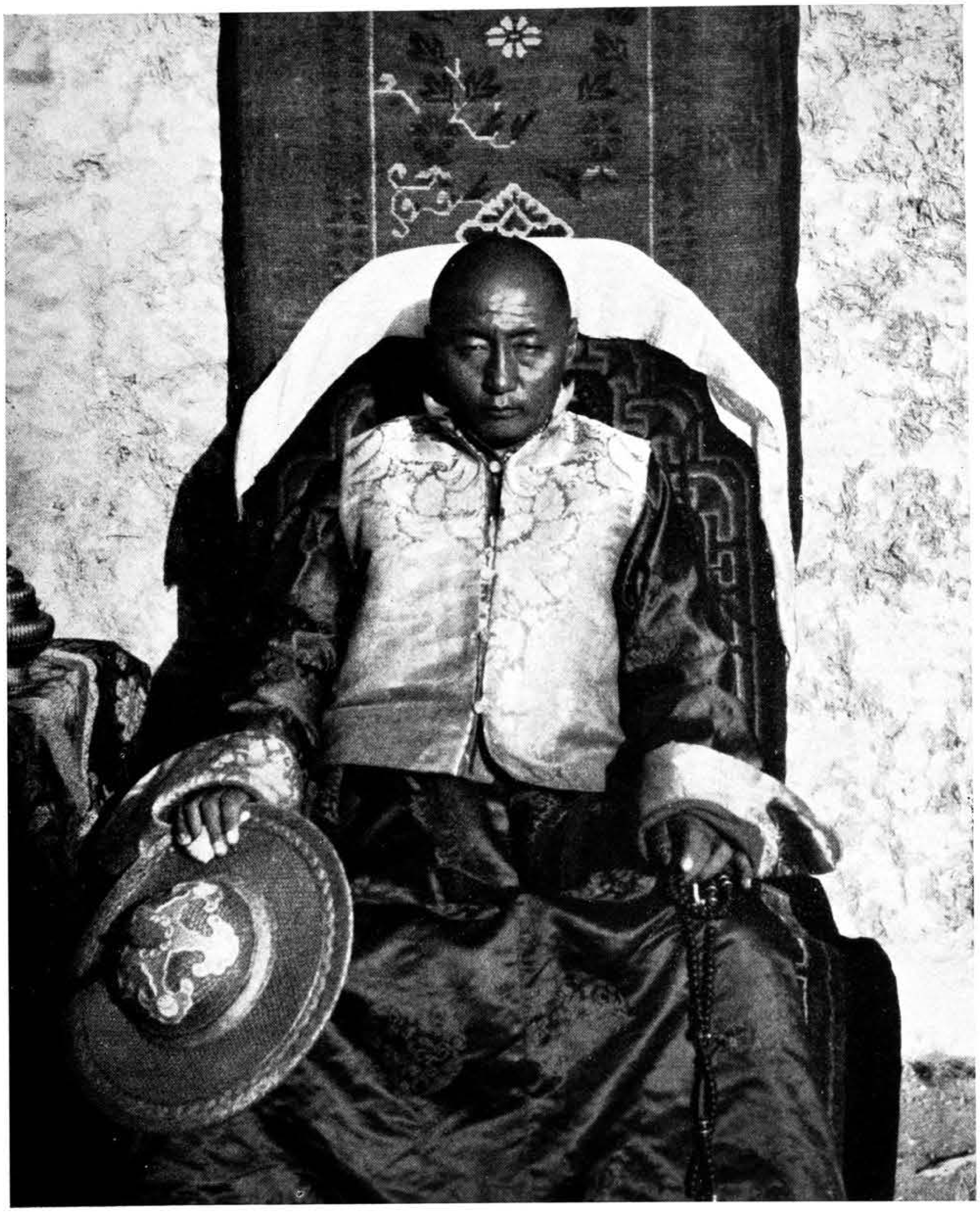


Hempel Photo

Zimmermann on the slope of a sand-dune in the Lang-shan



The crossing of a canal near San-tao-chiao *Hempel Photo*



Hummel Photo

The Dobechyn Gegen, a Living God from Tibet partly overgrown dune forty meters in height. It took them no less than forty minutes to cross this barrier with the camels. The last bit of the march was simply a retracing of their steps from the journey out.

I allowed two more days at Shande-miao, for we had still much to do. I made notes in my journal and sketched local types. With HASLUND as interpreter, HUMMEL carried out ten anthropometric measurements and as many blood-tests.

THE DOBECHYN GEGEN

On the last day at the monastery we had no visits from the lamas. The prior had forbidden them to have any truck with people who measured their bodies and took drops of their blood. Instead, the doctor and HASLUND visited a high lama, an incarnation, the DOBECHYN GEGEN, from Tashi-lhunpo, who for four days had been staying at Shande-miao as a guest, on his journey eastwards. He was a cousin of the TASHI LAMA, whose father was the brother of his mother. The cousins were born the same year and were thus both forty-five years of age.

This *gegen* had received my emissaries with great courtesy, allowing himself to be photographed and sending me a packet of sugar. He had also expressed a wish to visit me, but was not able to do so until nightfall, when the lamas of the monastery would have retired to their cells.

And sure enough, at nine o'clock that evening he came. We spoke of the TASHI LAMA, his monastery and his journey to Peking, where I had met him not long before. The DOBECHYN GEGEN recollected my visit to Tashi-lhunpo, and remembered my having lived in KUNG GUSHUK's garden.

When, later, the gramophone was brought out and well-known songs, operas and marches filled the air around our venerable priestly visitors they brightened up wonderfully and proved quite insatiable. We had to go through the whole repertoire. But one could not truthfully describe our visitors, sitting there in their red togas, bald-headed and bare-armed, as a musical audience. They roared with laughter at HÄNDEL's Largo, of which we had a vocal record, the Pilgrims' Chorus and other such serious music. This was evidently an expression of their astonishment at hearing mechanically reproduced human voices. An old lama in the company was most absorbed in saving night-moths and beetles from a painful death in the flame of the candle that burned at his side, for no living creature might die in the neighbourhood of the sacred personage, or for his sake.

It was nearly midnight when the DOBECHYN GEGEN finally rose to take his departure. That he was pleased with his evening he showed the following morning, by sending me a couple of Tibetan trinkets of silver.

At last, on August 29th, we were able to start off again. The lamas came down to witness our departure and wish us God-speed.

VI. FROM SHANDE-MIAO TO THE EDSEN-GOL

THE FIRST SAND-DUNES

For the first few days our route swung off to the south, in order to go round the desert of sand that stretches to the west of Shande-miao, and whose scanty watering places are insufficient to supply the needs of a large caravan. But even on our southward route we came in among dunes, now bound by vegetation, now naked and presenting curious shapes of shields and crescent moons, pyramids and dolphin's backs. The landscape is here strongly reminiscent of the transitional belts between desert and steppe in Eastern Turkistan.

Before us we could see the low, dark ridges of the Khara-narin-ula. And between two high dunes one glimpsed the depression or flat arena where the diminutive Khoburin-nor is situated. There, after a very short day's march, we pitched our tents for the night. Actually there are two meres here, the water in the one being sweet, while in the other it contains soda.

This was our first meeting with dune-sand on this journey, and the landscape was a new experience for everybody but myself. The arena was on all sides surrounded by quite high and almost sterile dunes. ZIMMERMANN measured a couple of them, finding them to be 12.5 and 18 meters in height.

Next day we headed right into a narrow belt of sterile dunes. There was a sudden change of scene here — the sand giving place to even ground with steppe-tussocks. To the right one saw the high sand, against whose yellow wandering hills the green of the scrubby vegetation stood out in strong relief.

Time and again we crossed small lateral arms of the sand-belt, where the route led up and down and in and out. Small rocky outcrops also occurred; these were a crystalline slate formation.

At Talin-khashiat (The Enclosure on the Plain), our camping place for the night, a number of worked chips and cores of flint were collected.

The last day in August was HASLUND's twenty-ninth birthday, and MARSCHALL and HUMMEL celebrated the occasion by entering the tent at an early hour and singing songs in his honour. For the rest, the birthday was celebrated by the march to Tukhumin-gol, over gravel and sand and artemisia-steppe, past the well Ulin-khashiat, where merchants from Wu-yüan were staying in three tents, and to the bifurcation of the route whose left prong leads to Wang-yeh-fu and Tibet while the right prong, which we followed, is The Winding Road to Turkistan. Here we met a Mongol pilgrim caravan from the monastery Shara-muren-sume, situated to the east of Beli-miao. The pilgrims had been to Kumbum and fetched holy books.

We traversed a little outcropping of the mountain-country to the south, where an obo marked the boundary between Dunda-gung *hoshio* and Alakshan.

The route here swings off again to the west. To the left here is a field of sharply demarcated high sand, while the right sand-belt dwindles and comes to an end.

The weather was cool and beautiful, and the camels stalked off westwards with more than their usual vim. To the south the high sand glittered in the sun like gold. We followed the shores of two little lakes, now almost dried up, Tsaghan-deresun-nor or The Lake of White Grass. Here we met a Mongol caravan, bringing grain from Wang-yeh-fu. The men were in high spirits because they were on the way home, and they joked merrily with MENTU.

At Bayan-modo, The Rich Trees, stood a mud house, where a large Chinese caravan was resting on its long journey to Ku-ch'eng-tze (Guchen). About a hundred wild elms, sparsely scattered, grew in this spot.

TUKHUMIN-SUME

We now saw the monastery Tukhumin-sume, with its white houses and temple on the crown of a low terrace, below which we pitched our tents. The monastery is only a small one, but it was clean and nicely kept. Here, too, there was a tax-station, demanding twenty-eight cents for every camel. The question of a tax was not, however, even raised as far as we were concerned. We were informed that during 1926 no fewer than twelve thousand camels had passed this place, but that traffic had declined much this year owing to civil war and banditry. The westward bound caravans carried tea, cloths, colonial produce and the like, while the east-bound merchants had wool, hides, furs, mats, raisins and other dried fruits

THROUGH THE WASTES OF ALAKSHAN

On September 2nd we rode between hills towards a very flat ridge, the crown of which nevertheless afforded a marvellous panorama to the west. From this point of vantage one saw the surface of the earth in different coloured streaks, now yellow — that was a sand-belt, now greyish violet — that was gravel, now shot with green from the sparse tussocks of the steppe. The same tones were repeated, fainter and fainter, till they reached a horizon that seemed to melt into infinity. And again one had the illusion of seeing the ocean in the distance.

Always new landscapes. Now we ride in among dunes covered with a luxurious growth of magnificent, dark-green saxaules. This bush, which often grows tree-high, is called by the Mongols *jagh* or *dzagh;* but it also bears the name of honour *modone-khan* or king of trees, on account of the fact that its wood does not, like that of other trees, crackle or sing when thrown on the fire. It has, moreover, another quality to recommend it in that it produces extremely little smoke. Its Latin name is *Haloxylon persicum.*

At Dzaghin-khuduk or The Saxaule Well we stopped for a while and drank of the cool, sweet water. The well has been dug in rather loose soil with an admixture of sand; and in order to prevent its collapsing the mouth has been reinforced with bent tree-trunks, forming a solid ring at ground level. The caravan animals watered from a hollowed out wooden trough.

Our caravan had lost itself in the saxaule wood, and I caught it up just as the mounted Mongols were looking for the track. In a short time we were on the right road again, and the Mongols, followed by the long procession, went on over dunes and between bushes, singing as they marched. They looked as solemn and grave as cypresses. And so to Shine-usu, The New Water, where we camped.

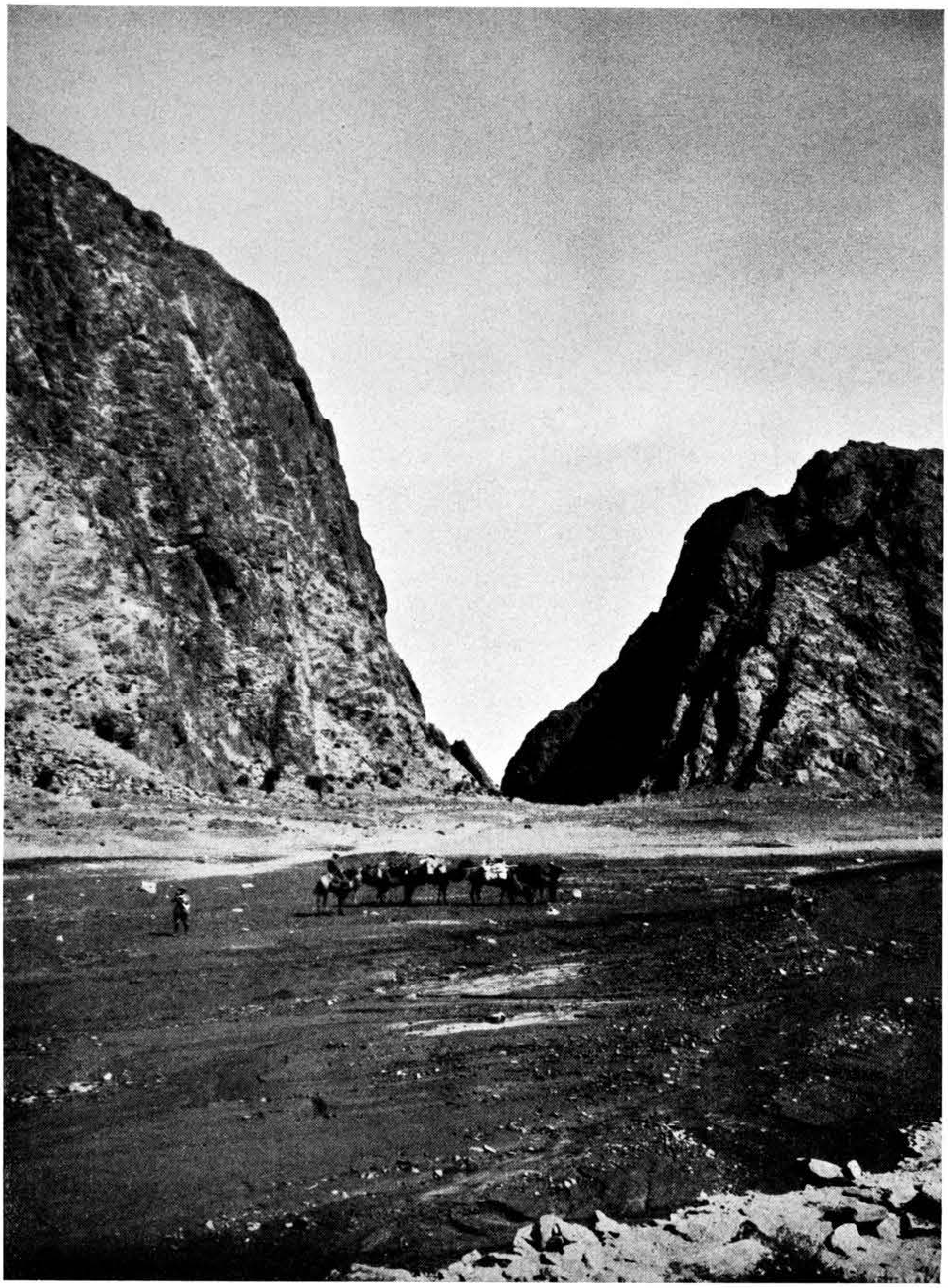
LARSON was still ahead with the provision caravan; and it was always easy to recognize his camping grounds, as for example at Tsaghan-deresun, where after a cloudy day we pitched our tents on September 3rd.

We had not progressed far next day in the hilly country we were now traversing before we met a picturesque caravan of fifteen Chinese, men, women and children with a dozen camels on the way from Chen-fan in Kansu, where they had gone in the hope of improving their fortunes. But they had found all the cultivable soil already under the plough, and were accordingly now on their way back, with their little stock of worldly goods, to their old homes in Hou-tao, which is to say, at the northern bend of the Huang-ho. The whole caravan was led by a little boy. The women, sitting on their bundles and bales, with babies in their laps, looked ragged, dirty and poor enough. The menfolk walked alongside, on foot.

The surface of the moon can scarcely be more desolate than the country through which we were now riding. Sterile, dried up, with scarcely so much as a parched and languishing tussock to show.

Camp XXIX was pitched at a well with tolerable water, but surrounded with very meagre pasture. Here all the pack-saddles were taken off, and the camels that showed any signs of chafing were rubbed with a kind of salve. One of them was in such a bad state that he was allowed to travel without a load and was fed with flour and butter.

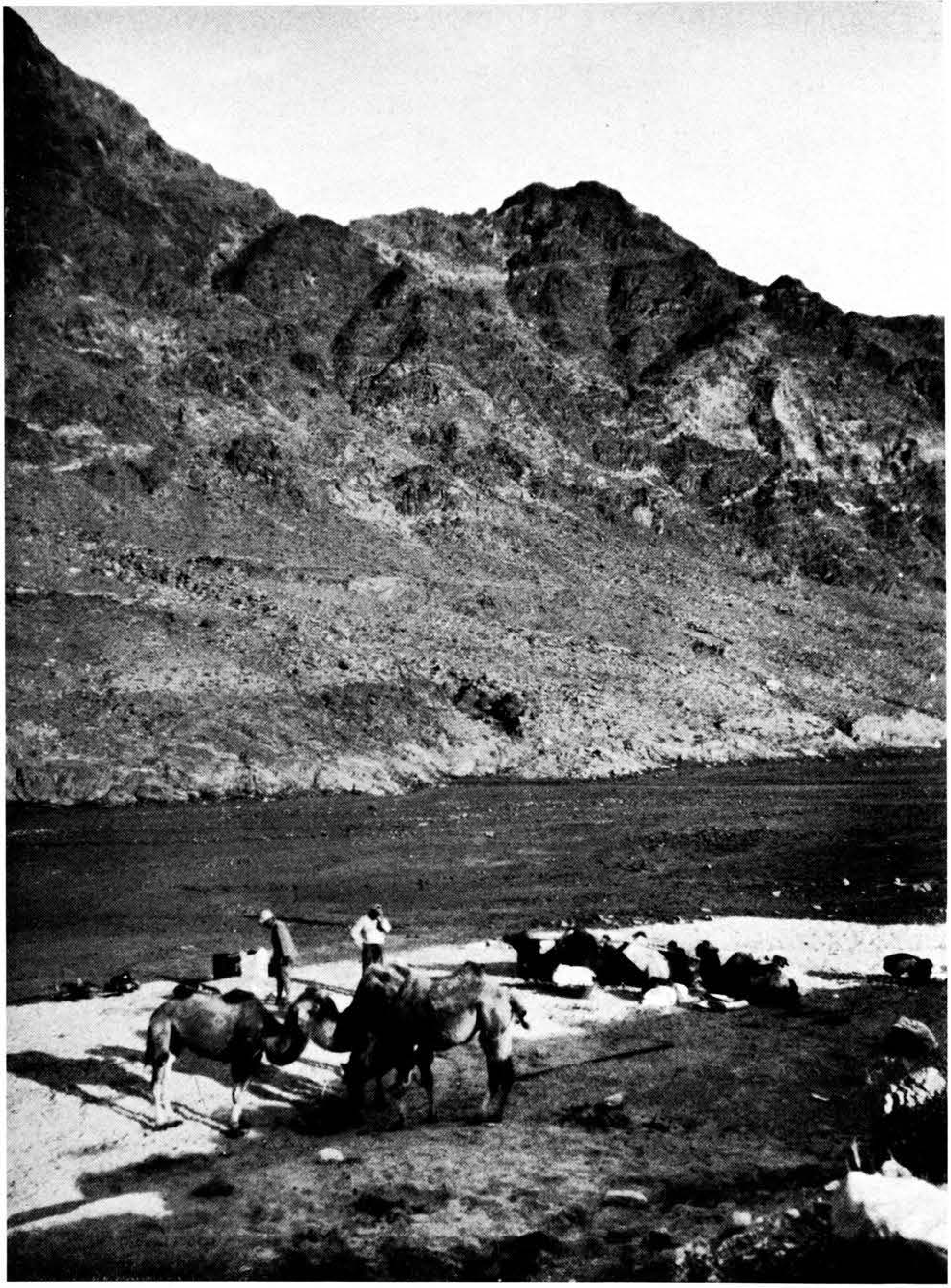
A whirlwind came suddenly sweeping over the desert and struck the long side of my tent with such violence that in less than a second every one of the eleven iron



Hempel Photo

The Hempel-Zimmermann caravan in the Lang-shan

PLATE 24



Hempel Photo

A camping place in the Lang-shan

pegs was snatched out of the ground, the tent was blown over and I, my stool and »writing-desk» went flying to the ground, enveloped in canvas folds. I had an envelope on the desk before me containing two hundred loose sheets of a carbon copy of my diary. When I had extricated myself from the folds of the tent I heard a rustling among the sheets and saw how the wind had torn open the envelope and now drove the loose leaves over the countryside like a fall of snow. In response to my shouts everybody rushed out and dashed after the sheets on their mad career in the grip of the wind. Some of them had come to a standstill in tussocks or in unevennesses in the ground. One after another of the Europeans, Chinese and Mongols returned with handfuls of crumpled sheets. One of the Mongols had seen a sheet fly »like a white bird» over the nearest row of hills to the south. LIU had run several li after a sheet. Finally, it was found that only two sheets were missing. We had such fun sorting them out that I asked my boys if they would like me to issue a new edition of »Fliegende Blätter», but the suggestion met with no response.

On September 5th the weather was clear and calm, the country flat and desolate. Some unknown Chinese wanderer had formed some characters with white stones by the wayside; they signified a greeting from the province of Chihli. Evidently he was feeling homesick.

At our camping place for the day, Argalin-usu, we found a Chinese mud-hut, a yurt and a little enclosure of dry steppe-bushes. The owner, who lived there with seven other men, appeared jovial and contented. In an outer room his supply of flour was heaped up on the floor, while from a pole in the roof hung a couple of sides of mutton. In the living-room there was a *k'ang*, where a tea-pot sputtered over a little fire. One wall was decorated with four landscape pictures; on another of the walls we admired a horse, painted in Chinese ink. The head of the animal was turned in a neck-breaking fashion, and two legs were coquettishly lifted in the air. The legend under the picture informed one that this was »a horse of noble and beautiful forms».

When SIU asked the merchant whether he did not find life hard and strenuous in this wilderness, he answered with a philosophic smile: »A man must do something to keep the wolf from the door». And he probably made very easy money selling flour etc. to passing caravans and to the few Mongols that live in this desolate part of Alakshan. He had a seven days' journey to Wang-yeh-fu, called, simply, Yamen, and four days to the frontier of Outer Mongolia.

On the bank of the broad dry bed of a stream near the camp grew a solitary wild elm whose leafy magnificence was in strange contrast with the level desert country stretching away to the south like a vast expanse of sea. This lonely tree was a fine example of the bitter fight for life in these incredibly bare and desolate regions. The landscape was wonderful in its wild splendour; and we were quite spoiled with the most marvellous sunsets. In their colours and tints and the grouping of their light cloudlets they were eternally changing, and eternally beautiful. The sun took leave of the wild elm, who knew very well that the next morning he would be bathing in warm rays from the east. The greying glow smouldered for a while and then faded over the western horizon, while the heralds of the night came riding from the east in grey-blue and violet capes. And still, for a time, there hovered in the higher layers of the atmosphere a delicate, rosy sheen, the reflection of the vanished sun.

The route led in a north-westerly direction between hills. My riding camel had got sore feet and had to be relieved. I was therefore mounted on another camel; the beast was inclined to be obstinate, and became sullen if she was not allowed to go with her comrades.

The road led on to a ridge, and from here one had the impression of being surrounded by a stormy sea. The landscape was a labyrinth of small, strongly sculptured hills, consisting partly of outcroppings of rock, and shot with red, violet and grey-green shades of colour. Occasionally we passed a tree. To the south-west, at a distance of about ten li, was situated the monastery Shardzan (Shartsan)-sume[1] — one of the eight large monasteries in Alakshan. Among them is also Tukhumin-sume.

The soil turned red; the hills were brick-red or pink. The country was bare in the extreme, only here and there did one see a parched or dying tussock. The labyrinth gradually gave place to a wide, open plain. On this plain, at Dobolor, was the homestead of a Chinese merchant. A yurt-roof was mounted on the roof of the house, giving it a curious appearance of house-cum-cupola.

The next watering place was Ulan-tologoi or The Red Head (i. e. the hill), where the well was surrounded by ox-blood coloured hills. Here we pitched camp. At Dobolor LARSON had left nine spent camels behind, under the care of one of our Mongols. HASLUND now exchanged four of these and the remaining five were left for NORIN's column to pick up when they arrived.

A caravan, one hundred and sixty camels strong, came out of the west with a clanking of bells. They were carrying sheep's wool and opium. Two of the camels bore basket-cages of precisely the same kind as the sort of camel-litters that in Persia are called »kajawah». In these covered and curtained-in cages sat women and children. Most of the men were squatting on camel-loads, where they sat shrouded in sheep-skins, the others went on foot. These merchants had their homes in Chihli, Shansi and Honan, and had been on the way from Ku-ch'eng-tze for fifty-eight days. Despite the long journey they had behind them, their camels were almost complacently fat. But then they travelled only at night, and pastured the whole day.

We bought a couple of bricks of tea for our Mongols, at fifty cents apiece.

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[1] KOZLOV gives the transcription Shartszan-sume for the name of this temple, of which he also reproduces a picture in his Mongoliya i Amdo i mertvi gorod Khara-khoto, p. 536. F. B.

Not far from camp XXXI at Ulan-tologoi we passed the wheel-tracks of three motor-cars, a very uncommon and surprising sight in these desert tracts. Later we heard from LARSON that he had reached Ulan-tologoi with his advance caravan at the same time as the motor-cars. He even happened to know one of the drivers from Urga, whence they had come. They were on the way to Ning-hsia to fetch fifteen Russian instructors who had been in FENG YÜ-HSIANG's service and were now going to return home.[1] Our people had had a pleasant evening with the Russians, who had invited LIEBERENZ and his film camera for a trip of fifty li, giving him an opportunity of taking some interesting pictures of a car that had got stuck in the sand and had to be dug free with spades.

Our road of September 7th led down through a sharp-contoured valley, a stream-bed running between steep hills. We saw a deserted Chinese homestead that had been taken over by Mongols. Here Dr HAUDE had cast aside an empty hydrogen-gas cylinder. Occasionally one passed a stately wild elm growing in the bed of the stream. The route led right under one of these, and for a moment one heard the soughing of the breeze in the foliage, and felt the grateful shade afforded by the leafy canopy. It was cool and delightful, and the fresh breeze among the leaves sounded like the plashing of a waterfall, a greeting from a distant land. But the moment was soon past, and one was once more riding under the blazing sun.

We left the valley and turned up to the left in a lateral erosion-bed leading to a little pass with an obo. On the plain at the foot of the hill the ground was shot with green, and there about a hundred camels belonging to a resting merchant caravan were browsing. On the yonder side of the ridge a ravine, a real valley of death, led down to the plain. Here, in one single spot, lay ten camel-skeletons.

Day after day we journeyed on to the west, little dots in a limitless desert. Hardly a trace of vegetation, no surface water, no life. Occasionally a little lizard scuttled past. We pitched camp at the well Shara-khulus, or The Yellow Reed. It would not be easy to find this little hole in the ground if the spot were not marked with a heap of stones. The latter was horribly crowned with the skull of a camel, stones in the gaping jaws. It looked ironical, hateful, cruel.

On this day we had a maximum of 30.8° C. The last nights the minimum had been + 5.5° and 9.6° C. Owing to the strong insulation one felt the heat of the day like an oven. One counted the hours till evening, which always came as a relief and a blessing. What would it have been like if we had passed this way two months earlier?

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[1] On the Russian »40 verst map» there is a road between Urga and Ning-hsia crossing our route somewhat to the east of a place called Ulan-tologoi-khuduk, which may be the equivalent of our Ulan-tologoi. The road then passes the temple mentioned in the previous note (Shartszan-sume). F. B.

Just before sunset a young Russian, ALEXANDER SERGEEV, entered my tent. On June 6th he had left Urumchi with a merchant caravan of four hundred camels, belonging to a Tungan transport company in Kuei-hua. When they reached the Edsen-gol, four Tungans had decided to make a forced march to Kuei-hua, and they asked SERGEEV if he would like to accompany them. He told me that they rode eighteen or nineteen hours a day, sleeping only between 11 and 4 o'clock. His riding camel went at the rate of one hundred and twenty paces a minute; mine went only 80—84. It seemed scarcely credible that they had covered the distance from the Edsen-gol in four days, making at least one hundred and fifty li a day. SERGEEV, who had lived for two years in Urumchi and four years in Kulja, was on his way to Tientsin and Australia, where he had a brother. He was a smith, and quite uneducated, and he had only the vaguest notions of the country he had traversed. But he talked entertainingly about the life in the capital of Sinkiang, and said that we were expected there. Then, suddenly, he sprang up like a steel spring and bade us farewell. »Greet all the girls in Urumchi!» he called out as he rode off with his company on flying camels. He was like the wind — one does not quite know where it comes from nor where it goes. It just rushes past.

The sky on September 8th was covered with thick clouds and the south wind blew with unusual force. On our left was a chain of small hills. Crossing a pass with an obo on either side of the route we came in among dunes, and the sand flew in our eyes. This road must be hopeless in winter, with driving snow. The cairns that had been erected here and there were often a boon, whether they had been set up for the sake of travellers or of spirits.

We rode past one of LARSON's camels. He had fallen and died in the middle of the road, and lay in the usual position with all four legs outstretched and head bent back till it touched the front hump. He seemed quite fresh and untouched; the poor beast had expired only the previous day. But three large vultures were keeping watch over him. The dogs made a dash for them, and they lifted themselves unhurriedly beyond reach. My camel shyed at his fallen comrade, and I cast a melancholy glance at him. He was a friend, a fellow-traveller, one of our company. He had only done his duty but had not the strength to go farther.

Three antelopes flew northwards, and the dogs gave chase — in vain. The soil was very sand-bound, and there were dunes in plenty. Among them were numbers of dry saxaules. For this reason the salty well besides which we camped is called Khara-dzagh (Khardjagh) or The Black, *i. e.* Dead, Saxaule.

The wind veered round to the west and increased to half a gale. In a short time it had developed into a first-class sandstorm. As the various sections of the caravan arrived they emerged from the flying sand and whirling dust like phantoms. It was like looking at them through muddy water; sometimes one could

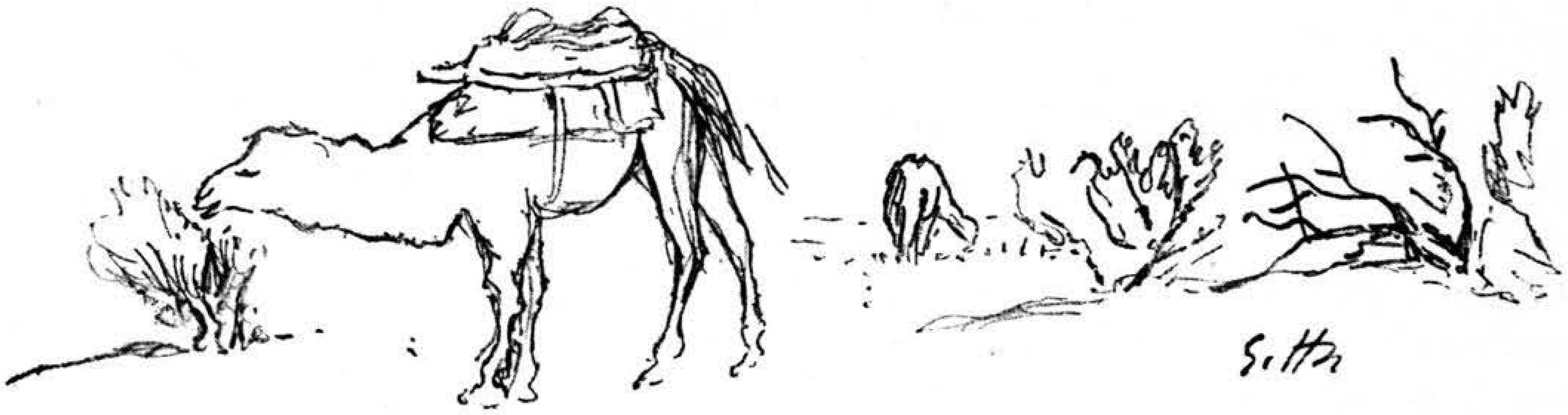


Fig. 6. Camels among saxaules

not make them out at all. Everything in the tent was soon covered with fine sand, and one got sand in one's eyes and ears, under one's clothes, in one's pockets and in the food. By evening I had all my pockets full of sand. Even the dogs and the antelope Dicky sought shelter in the tent.

Towards evening, however, the storm had abated. Despite the weather, the temperature during the day had been as high as 27.8° C.

A SERVANT ASTRAY

The pasture in the vicinity was tolerable. On taking tally of the camels in the evening one of the beasts was found to be missing. A couple of Mongols and a young Chinese went out to search for him. He was soon found by the Mongols, but the Chinese did not return. No-one took much notice of the fact; he would probably come back during the night and silently disappear in his usual corner.

On the morning of the 9th he was still missing. We thought he must have been overtaken by darkness and had slept under the sky, and that he would turn up any minute. Later in the morning his continued non-appearance began to look suspicious. A man who loses track of his surroundings and the few land-marks in this desert is lost if no one comes to his aid. And death by thirst is inevitable. Our Chinese was as much a stranger in Alakshan as we ourselves.

HASLUND and BATU rode out with water. The hours passed. We were preparing to spend another night here when at 4.20 p. m. the two searchers returned, bringing the missing Chinese with them. He had wandered about all night and all day, going round the camp without having the least idea of his whereabouts. It was evident from the traces he had left that he had at times thrown himself down and beaten the sand with his staff, in despair. When they had finally found him he was lying on a dune, weeping.

Despite the late hour I resolved to set out with MENTU for the well Ukh-tokhoi, only twenty li distant. The caravan was to come on afterwards, being guided by our camp-fire.

We rode over frightfully barren ground. On a black hill sat a raven, clucking and cawing. In the north-west rose a striking mass of rock, with four precipitous peeks, giving the appearance of a king's crown and dominating everything else. Its name was said to be Shugum-khairkhan. The desolation on all sides was terrific. One felt like an intruder on the moon. It is almost oppressive to ride along in a hard wind and falling dusk in such a God-forsaken and hopelessly desolate part of the earth.

Arrived at the well we found the surroundings here just as bleak. It was almost midnight before we heard the others calling in the distance. This desert camp was pitched in the middle of the night, and then it was not long before all was silent. Men and camels fell into dreamless sleep, earth itself slumbered, and only the moon was wakeful, shedding a bluish white silver gleam on one of the bleakest tracts in the Gobi desert.

When I came out of my tent the next morning I could scarcely believe that the landscape that surrounded me was the same as that I had seen the night before in the moonlight. Then, one had the impression of riding between high mountain chains at quite a long distance from the route; and now it appeared that with the exception of the mighty »four-peaker» the »mountains» were only quite low hills flanking a narrow valley. Moonlight is deceptive, like Night herself, when all colours vanish and distances are difficult to estimate. It was now also apparent that we had pitched camp among saxaules and drift sand. High, sterile dunes crept up the sides of the basalt hills, even covering them in parts, and filling all cracks with fine yellow sand. Here, too, was a light green, brittle and crumbling argillaceous slate, with an incline of 25° to W. S. W., the main layer of which formed sharply marked edges recurring in all contours. The whole landscape formed a bizarre and curious blend of mountain ridges and sand dunes, dead and living saxaules. But the surroundings were picturesque, and it is always pleasant to camp in and sleep on sand, and to have a plentiful supply of fuel.

So I set off with MENTU ahead. The sky was overcast and the usual heat of the day was not felt. We rode through a narrow defile between sand-covered basalt hills, every now and then passing an obo of dry wood in the shape of a stack of arms. Nothing but hills and dunes and saxaules, the latter growing to as much as five meters in height. We had also to traverse a barrier of dunes in the valley, on the other side of which my camel stumbled and stood on his head, but without casting me. The scenery was constantly changing — it was not like travelling over the great steppes, where one may ride for days without anything to relieve the monotony. Some stretches were absolutely sterile, others enlivened with beautiful saxaules and tamarisks. To the right we left the well Shara-khulustei behind, and farther on a bed with stagnant salt-water.

CATCHING UP LARSON

In order to reach Larson's camp we had to ride through a perfect labyrinth of dunes and over tiresome ridges of sand. In many of the intermediate hollows there was quite a rich growth of reeds.

When we got within sight of the tent-village of the advance troop, picturesquely situated in the yellow sand, Larson and Haude came running to meet us, cheering and waving their caps. They were astonished to see me emerging from among the dunes, for they had not expected us so soon.

On his way from Shande-miao Larson had had five rest-days, while we had not had one. He had been handicapped by a number of tired camels. He had arrived here at twelve o'clock the previous day, and intended to continue in the evening; but one of his Chinese coolies had dug a well that gave plenty of good water, so he had stayed on to give the camels a chance of grazing on the excellent reeds.

He had left eleven camels behind and bought four more for two hundred and forty dollars. Fifteen camels were to be allowed to fall behind from Larson's caravan. They were, however, to carry loads, but they would follow on at a slower pace in charge of Mate Lama. Larson needed still another camel-puller, and as we had more men than we needed we parted with an elderly Chinese, to whom the Mongols had given the nick-name »Obogen», meaning »The Old Man». We had taken him in our service at Shande-miao, where we paid him eighteen dollars in advance for a fur-coat and other clothes. At the camping-places he did the chores, was always up first in the mornings, collected fuel and made a fire in the kitchen. This old fellow, then, was to accompany Larson when the latter set off next morning.

I wanted to stay on for a day at this camp to give the animals a chance of resting and pasturing. The wireless masts were also to be raised to enable us to determine the longitude, and Hummel, moreover, was anxious to investigate the sand-flora in the vicinity. We had travelled for thirteen days without a halt and were all in need of rest and sleep.

THEFT OF TWO CAMELS

When Larson was ready to start at 5.30 it was found that »Obogen» was missing. A search was instituted and he was loudly shouted for, but in vain. »Well, well, he's out as usual after fuel,» we thought. The big caravan could not be held up for the sake of one man, and Larson started without him.

A little while later, Mentu noticed that the riding-camel that Larson had picked out for me the previous day was missing. Haslund immediately counted the camels and found that our two best were gone. The camp was alarmed. No one had seen Obogen or knew anything of his whereabouts. Only Professor SIU's boy WANG related that he had woken up at two o'clock in the morning, hearing somebody grubbing about the provision-chests that were always placed near the kitchen. He had asked from within his tent who it was, and Obogen had replied that it was he, and that he was just making a fire in the stove. As this was one of Obogen's daily chores WANG had turned over and gone to sleep again without suspecting anything amiss.

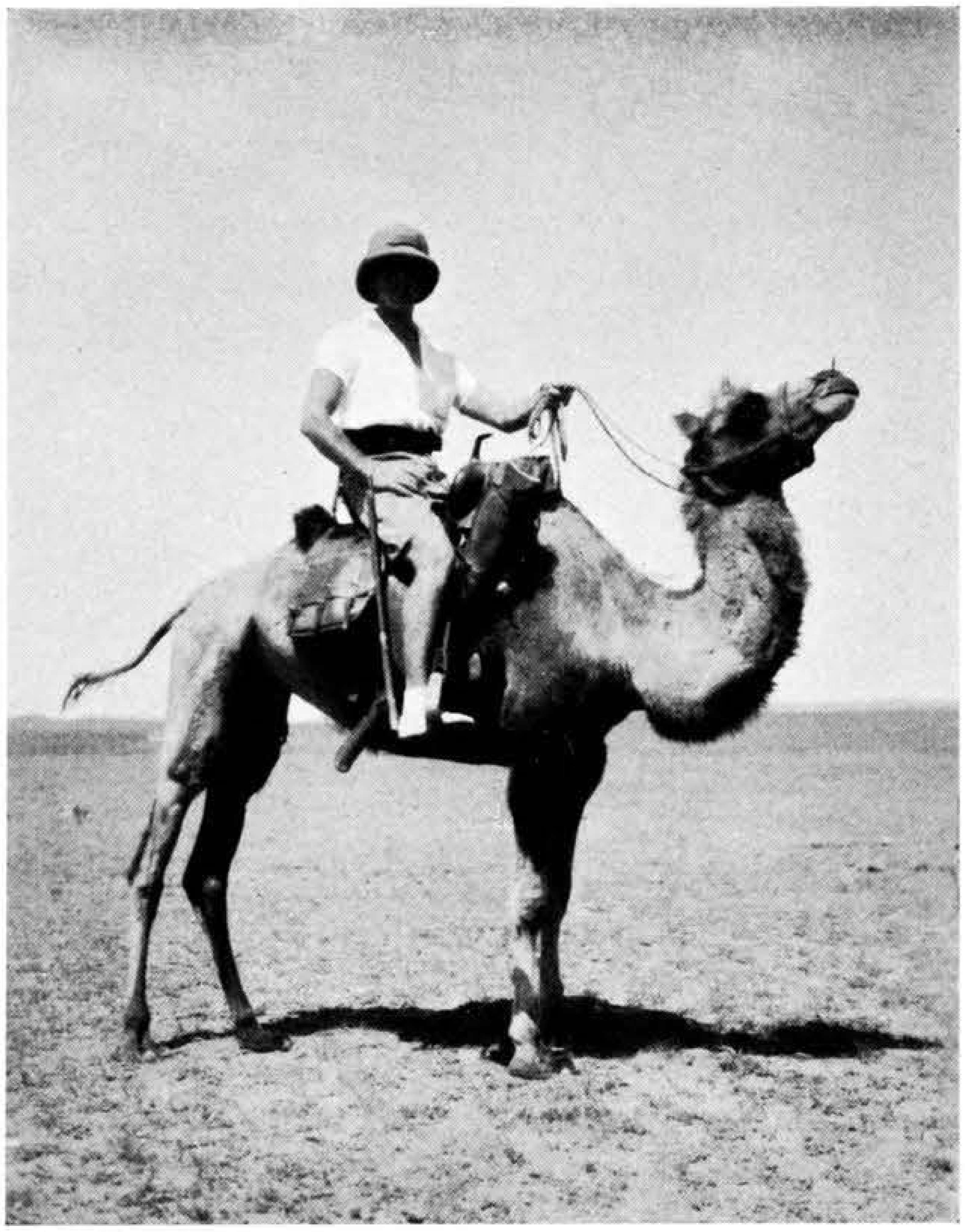
The provision-chests were now examined and WU, the cook, was able to say straight out that a sack of rice, a sack of flour and a supply of tea and sugar had been stolen. He himself declared that he had been robbed of five dollars. Finally, it was found that a riding-saddle was missing. The stolen goods had evidently been loaded onto the two best camels in our caravan between two and three o'clock in the morning, and the thief had then ridden off.

As soon as the discovery was made HASLUND started off with the Mongols BATU, MENTU, TSERAT and MATE LAMA to look for the fugitive.

In Mongolia camel-thieves are regarded as the worst sort of scoundrels, and a camel-thief who is caught is beaten to death or shot without mercy. I was almost afraid at the thought that our men might find the rascal and shoot him. I wished at all costs to avoid beflecking the memory of the expedition with human blood. And at the same time I was furious at the man's villainy amd felt that he should be punished.

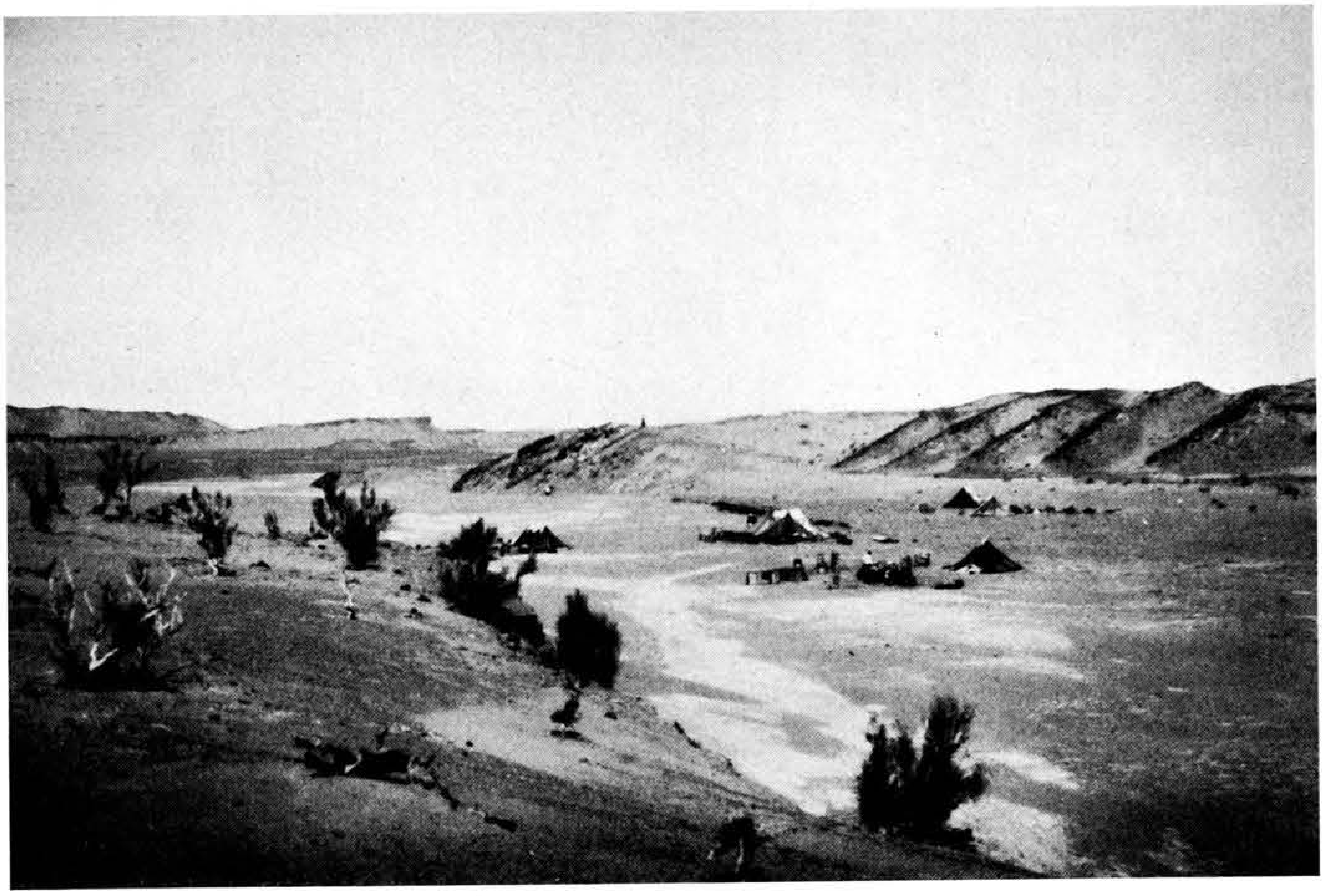
To find the tracks of two camels where over two hundred have tramped to and fro for a couple of days is no easy job. After a lot of searching, however, they had succeeded in finding the spoor, which led up to the high sterile sand in the south. There was a fresh wind blowing, and the spoor became indistinct. TSERAT and MATE LAMA had remained behind, but HASLUND and the others, who suspected that the rogue had made tracks for our former camp, in order to continue to the east from there, determined to ride thither. They returned late in the afternoon, but without having had any luck.

That evening we were treated to one of the most splendid natural spectacles I have ever seen. It was quite dark, and in the south, west and north hung heavy, compact clouds. Among these, flashes of lightning followed each other in such rapid succession that it was impossible to count them, for there were several every second. Everything was lighted up as if it were broad daylight; it was dazzling, astounding, confusing. The flashes reached right up to the zenith, and seemed jagging everywhere at once, but one heard no thunder at all. It was like a gigantic eruption of volcanoes beyond the clouds. I sat outside my tent in the pouring rain and enjoyed the spectacle of the storm over the desolate sand dunes. »That rascal is riding on through the night,» I thought, »and the tempest is erasing his tracks.»



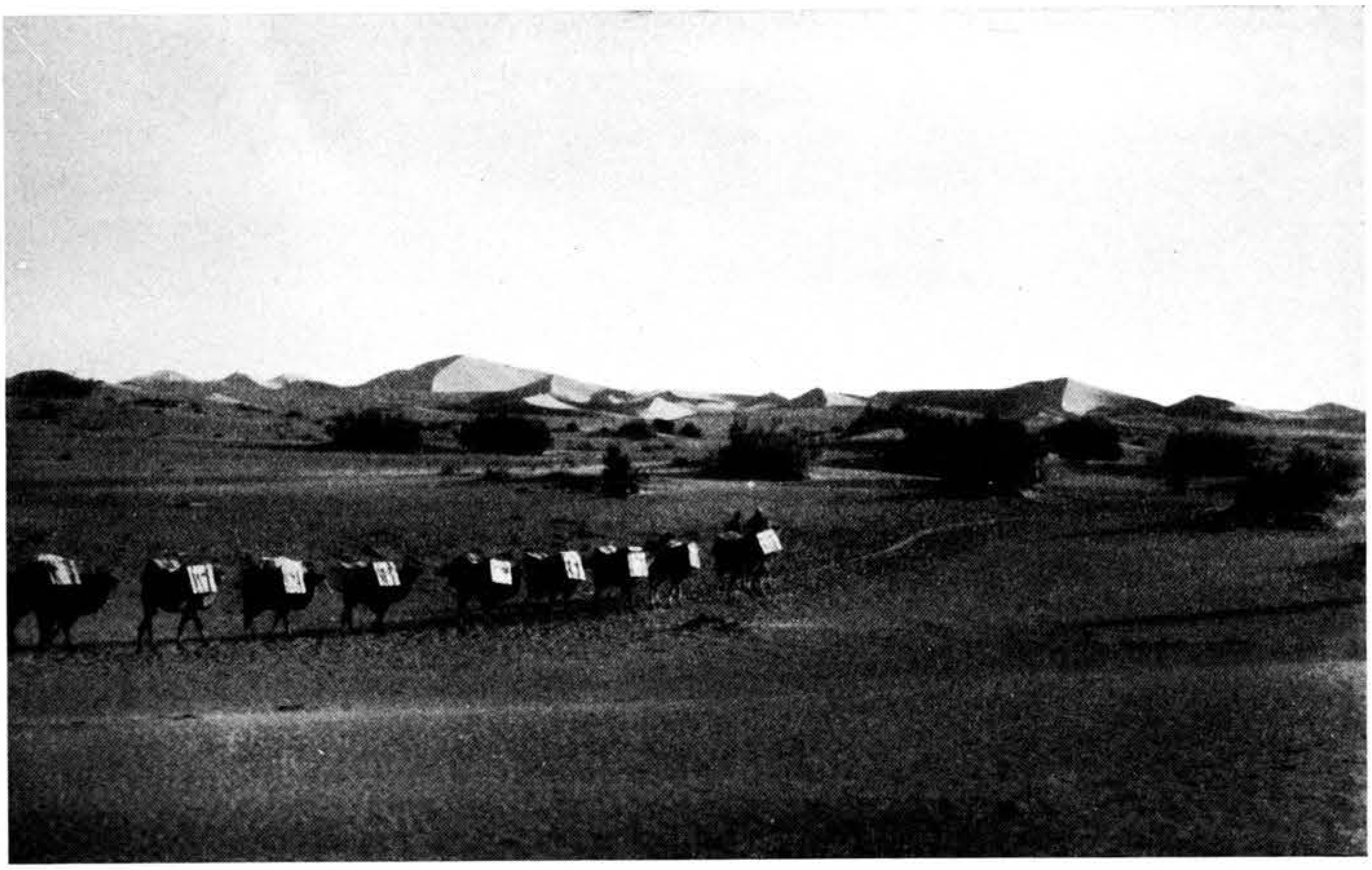
Haslund on his swift camel *Hempel Photo*

Wool buyers at a Chinese trading post *Lieberenz Photo*



Our lonely desert camp at Ukh-tokhoi

Hempel Photo



Approaching the high sand-dunes

Lieberenz Photo

On the morning of the 12th, however, MENTU came rushing up all out of breath, crying: »They're coming!» »Who?» I demanded. »TSERAT and MATE! And they've got the thief and the stolen camels with them!»

TSERAT and MATE LAMA were each leading two camels, and between them marched the miscreant with a rope round his neck, the ends of which were held by the two Mongols. His hands were tied behind his back and he walked with bent back and dragging steps. It looked as if he were on his way to the place of execution — and perhaps he thought that he was.

He was duly made fast to a solid chest. As the Mongols suspected that he would try to escape at the first opportunity that offered, a pair of iron shackles that could not be opened without a key were improvised for his feet.

The first thing the Mongols did when they had him secure was to take the flour, rice, dried fruit and so on that he had stolen and strew it over the dunes in the hard wind. The sacks were torn to rags and a stolen spoon was broken in pieces. No-one was willing to eat or to use stolen goods.

I discussed the case with Professor SIU and left the entire matter in his hands. Now that I had got the two camels back again the man did not interest me in the slightest. I was only unwilling that he should be let loose on the way we had come, for then he might steal camels from NORIN and YUAN. SIU considered that law and justice should run their course, and that it would be wrong simply to let him go. He ought to be handed over to the representatives of justice in Mao-mu on the Edsen-gol, where he would certainly be sentenced to a term of imprisonment. It was decided, then, that the fellow should be taken with us and kept under surveillance. On arrival at the Edsen-gol he was dismissed and taken a long way from the camp before being released.

After TSERAT and MATE, who had been under way for over thirty hours, had slept a good part of the day they were summoned to my tent to give a report. Their account was most exciting, but it would take us too far if it were reproduced here.

SANDSTORM

At midday a whirling sandstorm came sweeping up from the north-west, and drift sand hissed and lashed over the desert. The velocity of the wind was nineteen second/meters. A yellow-grey haze hovered over the horizon, which everywhere became indistinct and diffuse. A regular fusillade of myriads of grains of sand lashed against the canvas of the tents. Only the finest, which are rather dust than sand, can penetrate the texture of the canvas. They came raining uninterruptedly into the tent and gradually covered everything. When, towards evening, the storm showed signs of abating, the only visible objects in my tent were the box I used as a table and the chair. The bed was apparent only as a faint bulge. Everything else that had been exposed was quite submerged, and had to be carefully dug out. The layer of sand on the mat was 3.5 cm in thickness.

The night after the storm the temperature sank to 7° C., and one felt decidedly chilly. According to the barometric readings we were 1057 meters above sea-level.

The stolen camels and their pursuers were tired after their wild chase of altogether two hundred li to the south-east, and the two Mongols therefore petitioned for another rest-day at camp XXXV. All the seventy-nine camels revelled in the green, luxuriant pasture of reeds in the trough between the dunes where the subsoil water was near the surface.

The marching route for September 14th was at first to the north-west and at an acute angle with the saw-like and sand-covered ridge that rose in that quarter. We tacked in all directions over and between dunes and sparse tamarisks before we finally reached the crown of a little ridge with an obo. From this point of vantage one had an endless view to the north, where the distant blue horizon formed very flat ground-waves. To the south the sea of sand extended as far as the eye could reach with enormous yellow waves.

Up on the plateau the ground changes frequently. At times we were riding among tamarisk-clad dunes, at other times between low hills, and again over almost even ground strewn with fine gravel. Sometimes the soil was absolutely sterile. A low row of hills was broken by a valley, in the mouth of which the view to the north over the sea of sand was magnificent.

For a while we kept a northerly course, coming through a gently sloping valley out on to an endless plain.

At the well Ukhurin-usu, or Cattle Water, we were surrounded on all sides by desert. The camel pasture was scant, but the water uncommonly good.

We left MATE LAMA and a Chinese in charge of LARSON's fifteen tired camels, plus one of our own. MATE was instructed to follow on slowly with these beasts, making a halt wherever the pasture was good. He was expected to reach the Edsen-gol between ten days and a fortnight after us.

THE WELL OF THE LAMP

Just after midday on September 15th we reached another sand-belt with high, rather troublesome dunes where one had to travel in a zig-zag in all possible directions to avoid the most difficult passes. Tamarisks and saxaules grew in profusion and sometimes to a height of five meters. Their fresh, dark green foliage was a relief in the eternal yellow sand. Many of the saxaules were dead, and their crooked and twisted limbs lay about everywhere. Even the 'road markers' were made of them, piled up like beacons.

We pitched camp at Dengin-khuduk, the first well in the sand. Measured from the surface, which was 1.04 m under ground-level, the water was 1.24 m. in depth. Round about lay bound dunes; from one of them I made a sketch of the view to the north, which was magnificent in its endless desolation and vast extent. The sand region was yellow-grey, with a hint of red, but the »sea» to the north was blue-black, with lightening tones towards the distant northern horizon. In all its hopeless loneliness and indigence this landscape is one of the most grandiose one can imagine. It is full of defiance and pride. With its stiffened features it looks in contemptuous defiance at us ephemeral little creatures, that have dared to intrude in its paralysing, murderous barrenness. We gazed at its magnificence and might and its vast dimensions with respect.

Our course next day was now due west. We journeyed over hard, salt-impregnated dust soil, having to the south the high, sterile sand, which fell towards the level, sand-free ground in pyramidal and dolphin-shaped dunes.

Just to the west of Dengin-khuduk we passed a great camp, where bales of goods stood pairwise in long rows. About two hundred camels lay waiting for their loads. It was a Chinese merchant caravan from Ku-ch'eng-tze on the way to Kuei-hua.

The landscape scarcely altered for several days: to the south the high drift-sand, to the north the level, endless desert of gravel.

The route, one of the slender threads by which Sinkiang is connected up to China proper, was little more than a path, flanked on either side by numberless camel tracks. Over this path the caravan bells clanked their ancient melody, the camel-pullers hummed their songs and the silent, pattering steps of the camels contributed their faintly rustling accompaniment. And the milestones were, as usual, the skeletons of fallen camels.

OLON-TOROI, A FRIENDLY OASIS

For a couple of hours we had held a course towards two short dark lines near the western horizon. Gradually one was able to make them out as trees in two clumps. We scarcely believed our eyes. Trees in this limitless desert. Was it a mirage or a dream? But the grove to the left comprised fifty trees, that to the right about one hundred and fifty. On the edge of the latter our tents were pitched in the fresh and cooling shade.

This little oasis, where several wells offer a supply of potable water, bears the name Olon-toroi or »Many Poplars». The trees were *Populus diversifolia*, on the current year's shoots of which grow narrow lancet-shaped leaves, while the older boughs have heart-shaped leaves with serrated edges. The two groves were sharply demarcated and formed a real little island in the desert sea. All the trees were old. There was not a single young tree to be found. It seemed hopeless for this lovely little wood to propagate itself, for wandering camels would not leave a single new shoot uneaten. Most of the trees were in their prime, magnificent and beautiful; some few were ancient and wasted. A few of the trunks had lost their crown yet still had living shoots to show. One or two dried trunks had been riven from their roots by storms and lay on the ground like fallen heroes. The highest living trees measured eighteen to twenty meters.

Between the poplars grew reeds, and it was a pleasure to walk about and see with what a ravenous appetite the camels ate. They were obviously in the camels' seventh heaven.

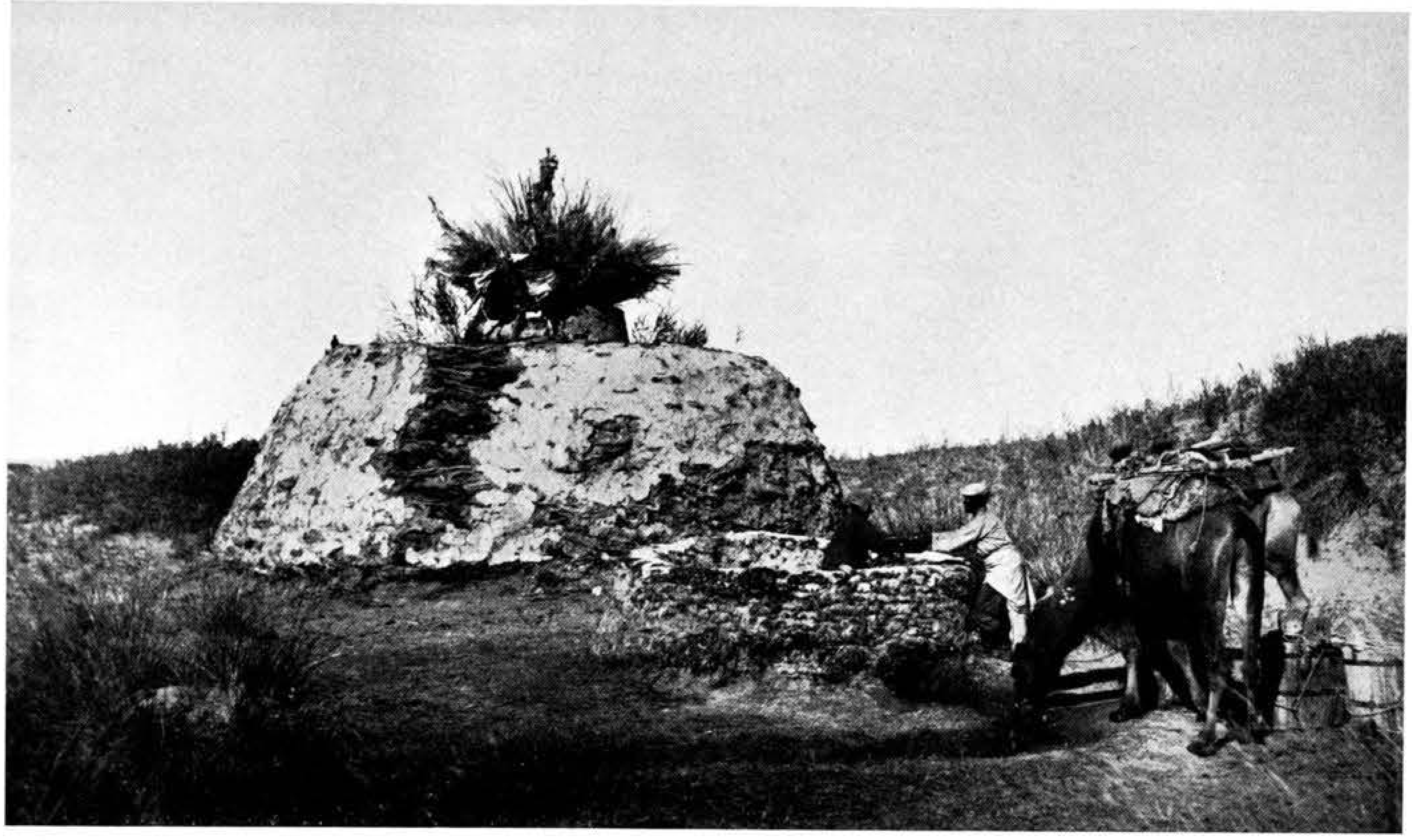
But the loveliest of all was to listen to the soughing in the leaves of the trees. One is not exactly spoiled with such melodies in the Gobi Desert, and one seemed to hear greetings in this soughing from Sweden's woods and forests and one's dear ones at home.

We received a visit from three wandering lamas or begging monks who had been journeying with their camels for five years. They were from Tushetu-khan in Outer Mongolia. They had recently come from Peking, where they had been to worship the TASHI LAMA, and now they were on their way home. They used to stay for weeks and months in every monastery they passed, and they begged their way along from yurt to yurt. From us, too, they received a tribute.

In the open space between the circle of tents a huge bonfire of dried trunks and branches was now lit. The gramophone was brought out and the well-known marches, arias and songs re-echoed in the cool night round the warming fire. The stars peeped down through the foliage, while from between the trunks of the trees we saw the moon rise over the dunes. Suddenly we heard a new melody, older than any we had on the gramophone. A large merchant caravan was approaching from the west, and it had bells in different keys, a whole carillon keeping perfect time. It sounded delightful indeed.

TALE OF CARAVAN ROBBERY

TSERAT came up to the fire and told us that this caravan of a hundred camels, thirty merchants and twenty servants on the way from Hami to the Edsen-gol, had been attacked by robbers, six days' journey to the west of Ghashun-nor. They had been plundered of 1,400 dollars and all their sheepskin coats. They had managed to hide a hundred dollars, but these had now been spent. The goods, hides, wool, dried fruits, had not interested the bandits. A comical element in the story was this: only one of the merchants was armed with a rifle, but in one of the monasteries the monks had advised them not to provoke people with weapons, and the rifle had therefore been left behind in the monastery. It was thus an easy matter for four bandits to intimidate fifty men and treat them as they wished.

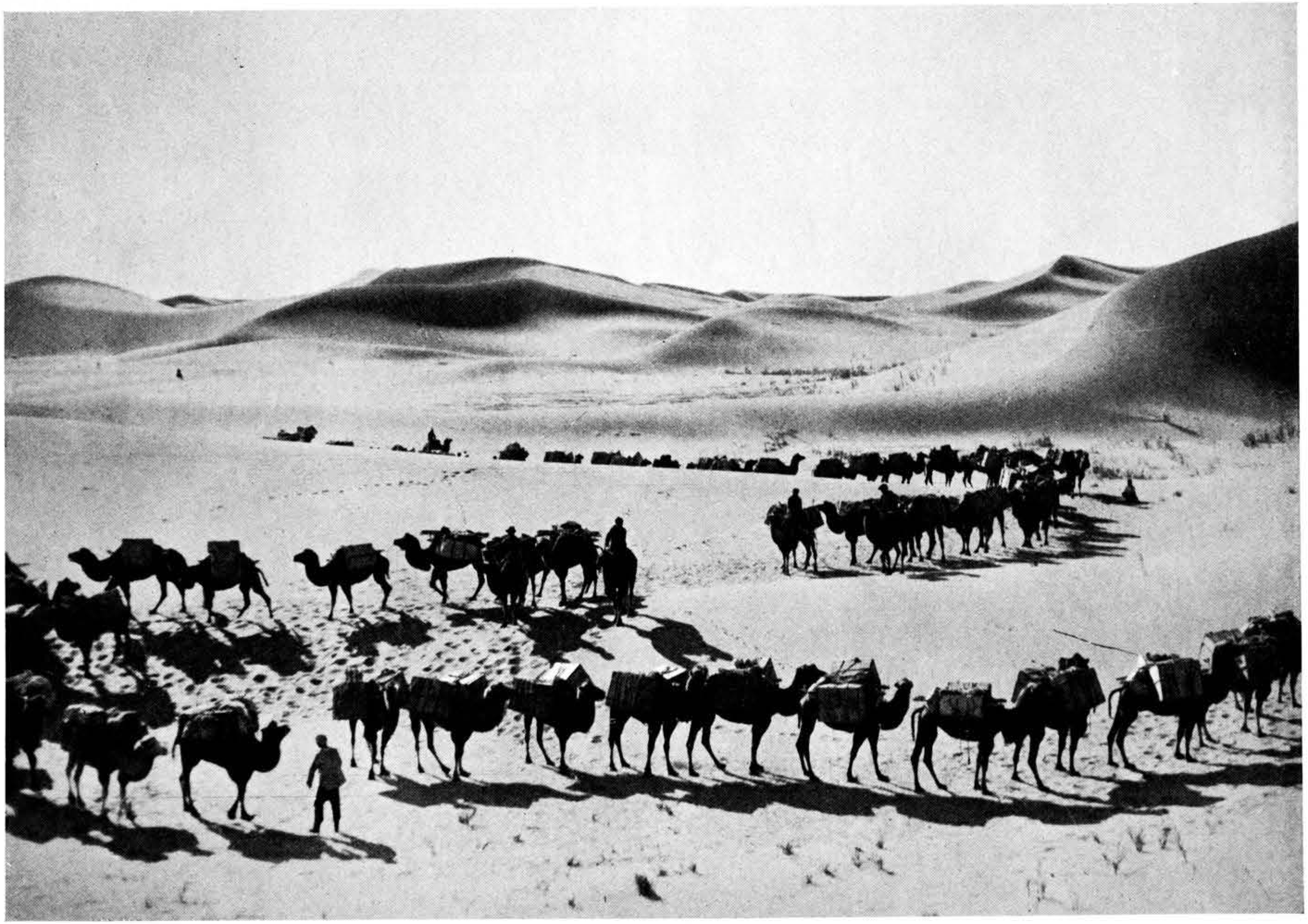


Lieberenz Photo

Arshan-obo with its health spring

Lieberenz Photo

On the slope of a sand-dune



Winding our way between the high sand-dunes of Alakshan

Lieberenz Photo

HASLUND had purchased two sheep for four dollars apiece, and before setting off in the afternoon we had at last a proper meal of meat, a luxury that had long been absent from our menu.

On September 17th we resumed our march over sandy wastes clad with tamarisks and saxaules, over sterile plains and past a little open spring with salt water. In some places there were luxuriant growths of grass in the form of little islands while in others they formed regular hedges — a very unexpected sight in this desolate country. Sheep and goats grazed in the grass.

ARSHAN-OBO AND ITS HEALTH SPRING

We came to a carefully constructed obo made of clay and branches and in shape somewhat like a *stupa*. It was surmounted with all sorts of sacrificial gifts hung up among faggots and twigs. At the eastern foot was a little wall, scarcely a meter high, surrounding the blessed spring of crystal-clear and completely sweet and cold water which was not less than three meters deep. This water is supposed to have a beneficial effect on the health and is used by the Mongols as a medicinal spring. The name Arshan-obo also indicates this. The water flowed freshly and copiously, forming a little streamlet that soon disappeared in the sand. I could drink four cups from this lovely spring with a quiet mind, without needing to fear any infection, and it was the best water I had tasted for a long time. Most of the wells along our road through Alakshan contained more or less brackish water.

In the distance, towards N. N. W., one could see low mountains. The high sand on the left rose in the form of yellow hills. A Mongol came past with eight camels loaded with wool. Saxaules grew in the sand, and dead dried trunks and branches of this tough bush lay on the ground with tormentedly twisted limbs and claws reminding one of Chinese dragons.

Presently we were once more journeying over a tract with a rich growth of grass and reeds and with lots of sweet springs, the latter sometimes forming round ponds with a reedy island in the middle, and again small meres and swamps. This tract is a salvation for wandering caravans.

A little group of trees among tall tamarisks in the sand formed a pleasant picture. Some white horses were browsing near the route. The September flies and mosquitoes were a nuisance, the former especially being inclined to upset the camels.

Shara-bulung was the name of a place where a Mongolian *ael* or tent-village was situated. In the neighbourhood of this village a spring had been surrounded with a rectangular wall for bathing. At another spring horses could enter the water and wade up to their bellies to cool themselves. We pitched camp for the night at the well Suji.

During the march on September 18th, too, the pasturing was splendid — the whole region quite a distance to the west is called Goitsen-gol (or as Kozlov has is, Goitzo). A spring in the neighbourhood formed a ring-shaped dam with a reed-clad island in the middle. The reeds here grew twice as high as the camels.

The mighty dunes to the left are said to extend a fifteen days' journey to the south without offering any water. The supply of water here on the edge of the sand-belt was all the richer. We passed two lonely trees and the votive sign Tsaghan-obo.

We passed in and out among bush-grown sand dunes where Orlogon's well is marked by a stack of dead saxaule trunks, finally pitching camp between two long dunes offering an inexhaustible supply of fuel.

At this camp (XLI) we stayed over for a day to let the camels revel in the reeds. The temperature was 28° C. in the shade, and it was swelteringly hot in the tents.

To the south extended a vast, dense wood of saxaules, reaching as far as the foot of the high sand — it was like the finest carpet.

THROUGH THE HIGH SAND

On September 21st we did not set out until the afternoon. The bushes were three to four meters in height and as leafy as trees. But finally they came to an end and we entered the high, sterile dunes. Only here and there grew an odd bush or so, and in the troughs even some stalks of reed. The route meandered up and down and in and out in the most devious ways. To the north rose some dunes of very considerable size that were absolutely sterile. They were picturesquely lit up by the setting sun.

We camped that evening at Shara-dzagh or The Yellow Saxaule.

The march to camp XLIII also took place during the later part of the day. We journeyed over and between saxaule-clad dunes. In one place a couple of wooden cairns had been erected. They gave one the impression of gate-posts. As we proceeded, the route gradually turned into horrible, soft, sucking sand. On either side we had whole mountains of mighty, sterile dunes. Between these two sand-fields runs a sort of valley or strip of rather lower dunes clad with bushes. In some places these latter are as tall as trees; sometimes it was almost like riding through a park.

The sand to the right was really imposing. The dunes for a considerable distance were so like one another that they seemed as if cast in the same mould. For quite a while we rode in the shade of a huge dune, and the sun sat riding on its comb. The sound of caravan bells approached. A first string of twenty camels was sharply silhouetted against the sun. A well-dressed merchant was riding the foremost camel. The usual greetings and questions were exchanged.

There were a hundred camels and thirty men in this caravan. They came from Ku-ch'eng-tze. Some were sitting in basket-litters and peeped out from behind the curtains. The last string had both the big heavy camel-bells with clappers and little sleigh-bells.

We had yet another belt of high sand to traverse before we reached Shubun-buluk, where we were to pitch camp. Near this spring there was a little mere with a surface area of about twenty square meters and one decimeter in depth. Beside this mere sat a herd who sold us a sheep and a goat.

On September 23rd we rode on over dune sand and among tamarisks on the long journey to the west. The country preserved the same character almost throughout the day. We camped at the well Sujin-dzagh. Here, too, a caravan from Ku-ch'eng-tze passed by. The autumn caravan traffic seemed to be in full swing.

On the following day the ground was now hard and even, now covered with small bound dunes. Finally we traversed a belt of rather troublesome drift-sand, where one sat rocking and balancing on one's camel as he struggled up a steep slope or sank and glided down the other side of the dune.

Once more we were on level ground. A few poplars grew here and there. On a little hill to the left an obo had been erected.

We pitched camp near a well on level ground.

BORO-TSONCH

Just to the west of the camp was an isolated plateau that rose about thirty-five meters above the plain, and thither some of us directed our steps in the morning to see the tower that crowned the plateau. According to HUANG this ruin dated from the time of the Han dynasty. There were quantities of potsherds and the remains of a fire-place. This was Boro-tsonch (The Grey Tower) — one of the few names on our route that is to be found on STIELER's map, where it is spelled Borosontschi.

The route now took us west-north-west, between partly yellowed and sparsely growing trees. We camped at the well Sukhain-khuduk, whose water tasted nauseous, smelling of sulphuretted hydrogen.

On the 26th the day's march led us over a couple of very low ridges. The country was almost sterile, and we passed only a couple of narrow belts of tamarisk on our way.

At the camping place for the day we divided up into groups. We had reached the place early and knew that we had not far to go to Khara-khoto, the ruined town from the thirteenth century that was discovered in 1909 by KOZLOV. Everybody was curious to see it and in different groups all the gentlemen of the staff set out either on foot or camelback on the road leading to the ruin.

On the 27th we rode over several narrow, hard plateaus with rather steep falls on either side, but not above a few meters higher than the level ground. At the foot of the first grew a lovely grove of poplars and tamarisks. The ground of the plateaus was otherwise sterile and strewn with a fine gravel. We noticed three old watch-towers in a line.

KHARA-KHOTO

From the top of a new plateau we could see the walls of Khara-khoto at a distance of five kilometers to the north-north-west. But first we had to cross one of those sharply marked billows in the ground and a labyrinth of large, hemispherical cones overgrown with beautiful tamarisks before we could enjoy the splendid and imposingly desolate view over the south and west town wall of Khara-khoto. Not far from the little Mohammedan building without the south-west corner-tower of the town, stood the tents of our caravan.

I climbed up on the town wall and made one or two fugitive sketches of the *stupa* or *suburga* on the north-west corner, the gate-house on the middle of the west wall, and the above-mentioned little Mohammedan building with its cupola. The town wall remains relatively undamaged with its rows of buttresses. Only in the eastern and western walls are there gates. The wall as a whole forms a somewhat irregular square, the sides of which our students paced out. With this method of measurement they arrived at the following dimensions: 425 m for the length of the south wall, 357 m. for the west wall, 445 m. for the north and 405 for the east wall.[1] Inside the walls were insignificant traces of buildings and houses. Sand dunes had accumulated both on the outside and the inside of the town-wall, reaching right up to the top of the wall; and inside the west gate rose a solitary dune just at the point where hard west winds had swept through the open gate for six hundred years.

To give a more detailed account of this town is the business of the archaeologist. A description has already been given by KOZLOV in his book »Zur toten Stadt Chara Choto», by AUREL STEIN in »Innermost Asia» and by LANGDON WARNER in »The Long Old Road in China». Without doubt the town is identical with MARCO POLO's City of Edzina, a name that we recognize in the Chinese A-tsi-na and the Mongols' Etsin or Edsen-gol. The place is now known under the name of Khara-khoto or »The Black Town», but is said also to be referred to as Batu Chiang-chün khoto or »The Town of the Hero-General».

At two o'clock I left the place. The road led to the north-west, and soon took one between two gigantic vegetation cones resembling a gateway. Similar cones then continued as a regular labyrinth, between which the road meanders and winds

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[1] According to a plan afterwards drawn up by BERGMAN it appears that these dimensions are too low, except the last, which is too high.

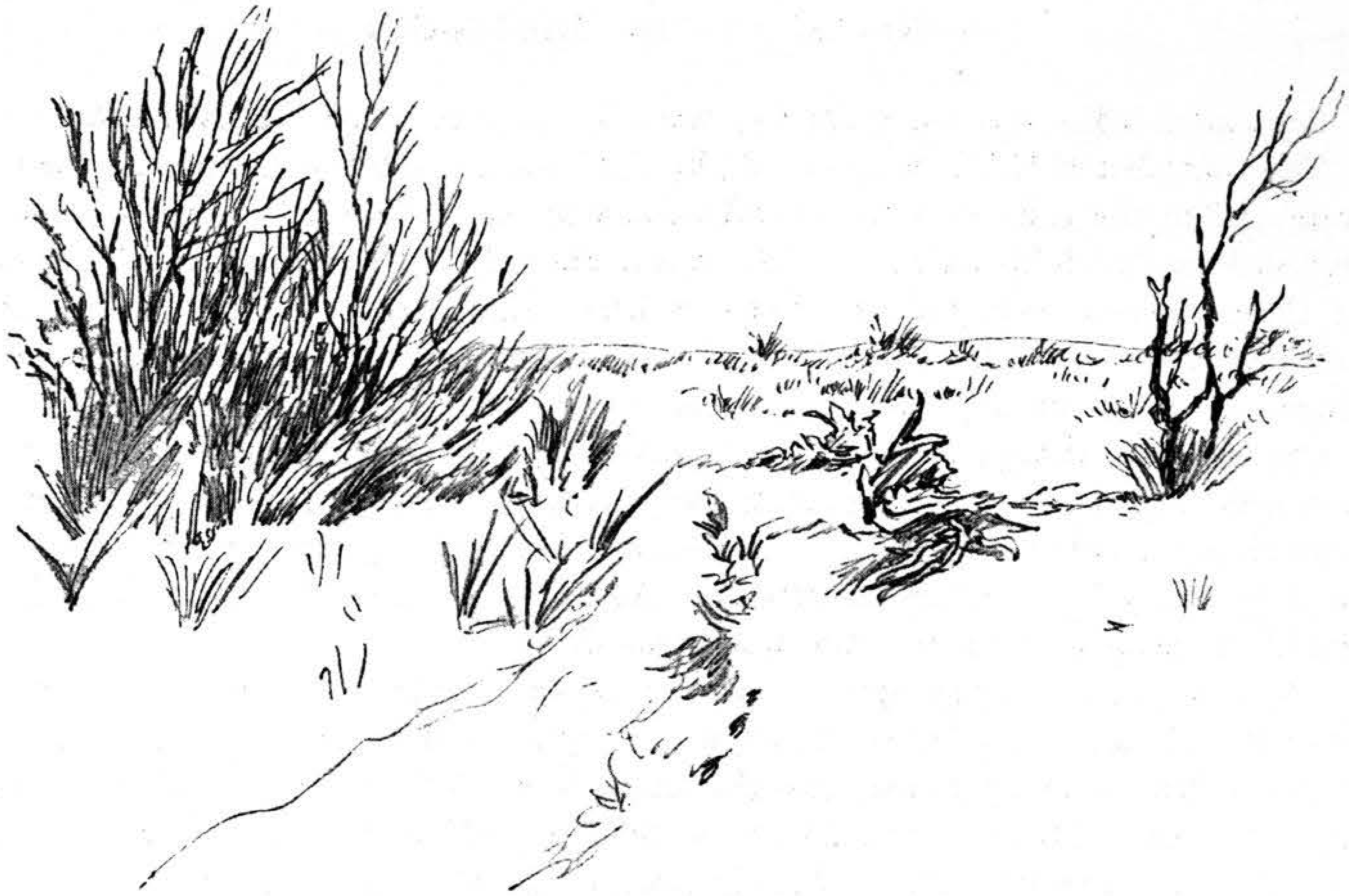


Fig. 7. Tamarisks at the Edsen-gol

as if through corridors and ravines. There were large numbers of tamarisks, both living and dead. The ground consisted partly of light clay with wind-furrows and partly of hard gravel. Between a couple of bound dunes flourished a grove of fresh poplars. The cones had exactly the same shape as the cupola over the »mosque» at Khara-khoto, and they were as much as eight to ten meters in height. Some of the tamarisks were six and seven meters in height, as tall as trees.

The countryside afterwards becomes more open and the distances between the vegetation-cupolas greater. The clay soil is furrowed by the constant grooving effect of the wind just as in the Lop desert, but the furrows here are quite shallow. A ruin that we passed may possibly have been a detached fort belonging to Khara-khoto.

After rather a short march from the ruined town we pitched camp XLVIII in the middle of the plain, where the ground was even and hard and innumerable trunks of dead trees lay strewn about. This, too, reminded one of old Lop-nor and the desert around Lou-lan. But there is one great difference: there, one sees numbers of dead trees still standing on their roots, while the dead wood to the northwest of Khara-khoto consists only of prostrate and rootless trees.

A yellow scorpion crawled forth from between the folds of the doctor's and HASLUND's tent. It was the first of its kind we had seen, and was immediately added to the collections.

September 28th was the great day when we were to reach the river Edsen-gol. The route led N.N.W. between tall, hemispherical vegetation-cones. To the left were visible the ruins of a house and two *suburgas*, while a little farther on were five such on the right-hand side. We once again lost ourselves in a dense labyrinth of these characteristic hillocks that owe their origin to the binding of sand and earth by the roots of the tamarisks, while the wind erodes the ground in between them. Their round cupola-shape is also, at least in part, the work of the wind.

One solitary *suburga* was quite well preserved. To the north-west our eyes were now quickened by an inspiring sight: the poplar wood on the Edsen-gol. We were soon riding between and under leafy poplars, whose foliage was already beginning to show the yellow colours of autumn. At the sides of a dried river-bed where flocks of sheep were grazing the wood was denser.

We now had a clear glimpse of water between the trees. There was the river! At first only a smaller lateral arm that was quite shallow and no more than ten meters across — and just past this the main river. BATU came to meet us to lead us to the ford. He rode ahead to show the way, followed by MENTU and at last myself. The camels hesitated slightly when confronted by the broad stream, but BATU's riding camel had already crossed the river twice and was not at all afraid; on the contrary, he seemed to enjoy the bath. Our camels had probably never seen so much water in all their lives. They followed their leader, carefully feeling their way with their fore-feet and splashing into the muddy water of the river. The greatest depth was nearly a meter, and the breadth was 212 paces.

On the farther bank (the western bank) I was met by LARSON, cheering lustily and waving his hat. On an open level space on the bank fluttered the Swedish flag from a seven meter high pole; and there stood the big mess-tent and the boys' tent, and at a little distance from the bank, at the edge of the wood, all the other tents.

The whole site was a pure idyll, the loveliest camp we had had, flowing over with everything we could desire. There were woods, grass and reeds growing man-high, dry fuel in the form of dried tree-trunks that would last ages, and a broad living river streaming past our airy habitations. I cannot describe my feelings of happiness and gratitude on our arrival at this camp, that was now to be our head-quarters for a month. Before us we had a lovely period of rest and work. Behind us we had the long journey from Pao-t'ou with its 1010 kilometers of wilderness and desert. The first big stage of our journey had been accomplished, and we could afford to relax for a while.

VII. STAY AT THE EDSEN-GOL

LARSON had reached the Edsen-gol five days before us, and pitched camp at Tsondol. Although autumn was on the way and the leaves of the trees had begun to turn yellow, summer still lingered. That the air at least felt warmer here at the end of September than it had done at the Khujirtu-gol at the end of July was perhaps chiefly due to the fact that we had come down from an altitude of 1595 m. to about 900 m.

Everybody took advantage of the opportunity to bathe in the river, even Dicky, our little antelope, who had never seen such a big stream in his life, swam quite fearlessly. Our dogs, on the other hand, were too cowardly even to enter the water.

Meantime, we discussed many plans for excursions that we hoped to be able to carry out before NORIN's and YUAN's columns arrived at our new head-quarters.

RE-PACKING OF PROVISIONS

A job with which LARSON, MARSCHALL, MÜHLENWEG and several of the Mongols were occupied for some time was the re-arranging and taking tally of all our provisions. I wanted if possible to have only half loads on the camels that were to take us to Hami; and for this journey it would not be necessary to take more provisions than we should actually consume on the way. In Sinkiang we could very easily replenish our stock whenever we wished — and such fresh supplies would be only too welcome after the monotony of the eternal tinned food we had been having.

The provisions were sorted out in different groups. Everything that was needed for the first meteorological station for a period of at least one year was set aside, while the provisions that would be consumed by the main caravan on its way to Hami formed another pile. In a third heap were placed the goods that would be needed at the main camp for the ensuing month.

The provision chests were made smaller by those of our Mongols who knew how to handle carpenter's tools. The new chests were then reinforced with the old iron bands. Finally, all the provisions were re-packed and entered in the books under new numbers.

Larson had bought some sheep for 4.50 dollars each and a cow for twenty dollars. He also showed us pheasants, grouse and wild ducks that he had shot, that would provide a welcome change in the menu. He and a couple of Mongols had succeeded in catching fish in the river, but Hummel took charge of these and preserved them in spirits.

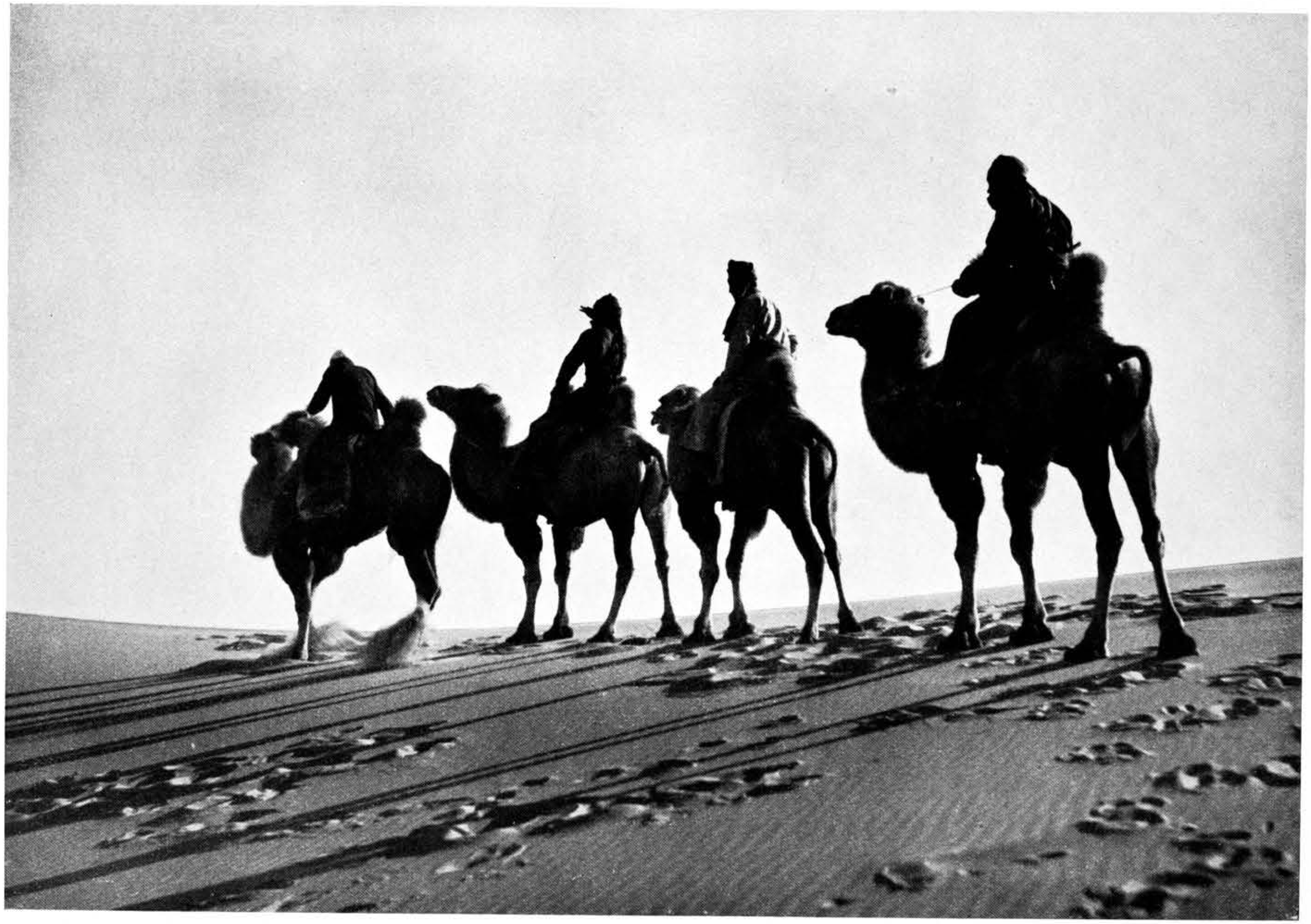
A FIRST EXCURSION

About thirty kilometers to the north lived the prince of the Torguts, whose friendship and trust we must win — not least for the sake of the station, and in order that the camels we intended to leave behind might be allowed to pasture. We therefore sent a courier armed with Siu's and my visiting-cards to inform the prince that we intended shortly to pay him a visit. He sent his own card to us in reply, bidding us welcome whenever it might suit our convenience to make the call. Hummel and Haslund equipped a little caravan for a trip to Ghashun-nor and Sogho-nor, the terminal lakes of the Edsen-gol. They would thus be the first of our number to see the longed-for lake where we had originally planned to establish the first meteorological station. Early in the afternoon of October 1st they were ready to start. Tserat had already set off with their four pack-camels when the young doctor and our Danish friend swung up on to the little ponies they had hired. They were to stay away for about ten days.

BOAT-BUILDING

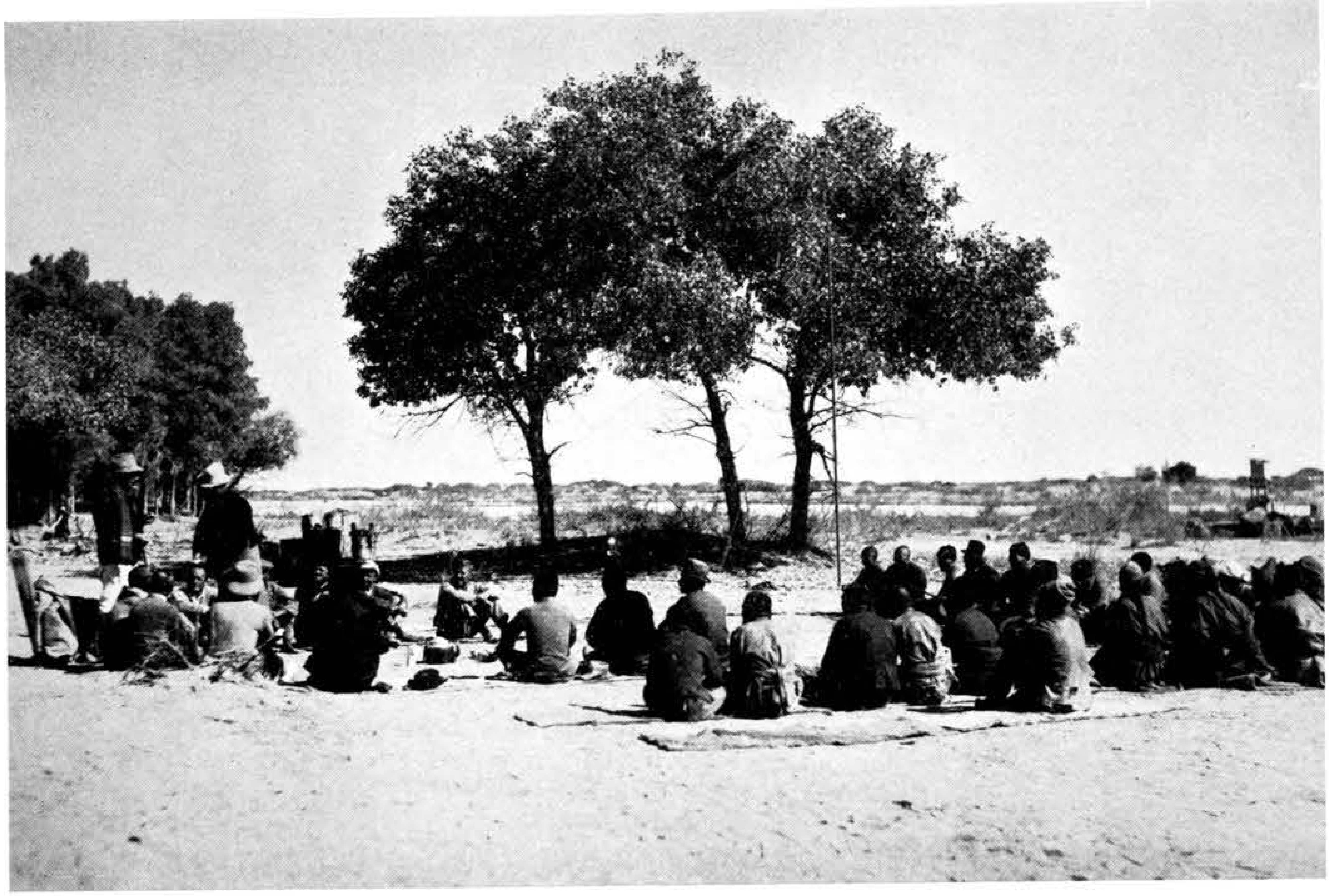
I wanted to make a chart of the lower reaches of the river as far as and including the lake Sogho-nor. I realized that I should not have time to chart Ghashun-nor, the sister-lake to the west. As I should need a boat for this project Larson was instructed to make one. In his broadest vernacular he answered calmly: »The boat will be ready in a few days.» The first attempts, however, were rather dismal failures, but our Mongol handyman Gombo actually did manage at last to knock together a vessel of sorts that floated.

By October 3rd Larson had the »boat» ready. It consisted of two parallel canoes held together by two strong cross-planks. Over them had been laid a deck of boards that had been left over from the re-carpentering of the chests. It proved, however, to be too heavy for such a shallow river; and it would be dangerous on the open water of the lakes, where in choppy weather the canoes would speedily fill with water.

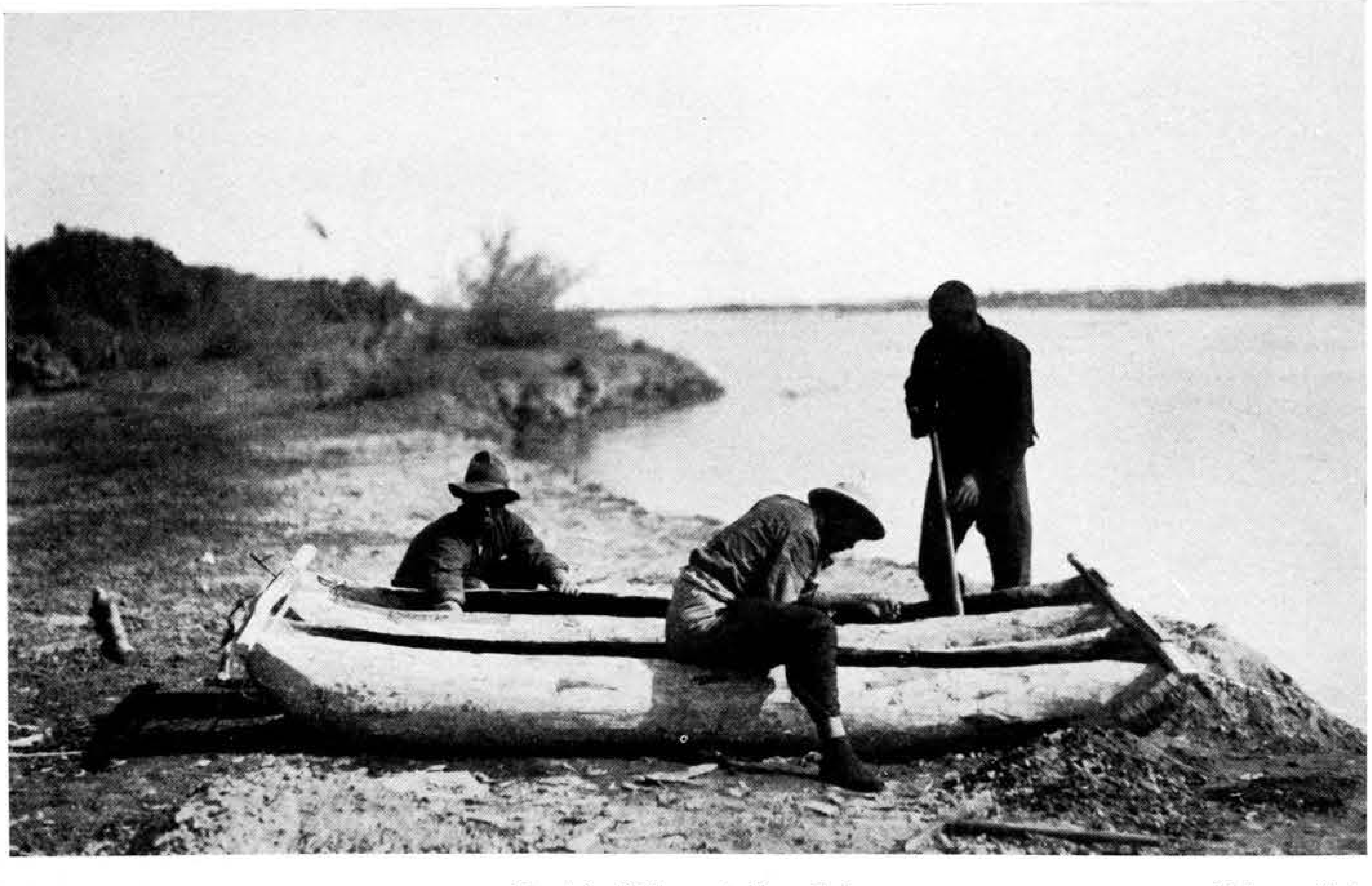


Four of our Mongols scouting from the crest of a sand-dune

Lieberenz Photo



Group at Tsondol on the occasion of the Double Tenth Festival *Lieberenz Photo*



Boat-building at Tsondol *Lieberenz Photo*

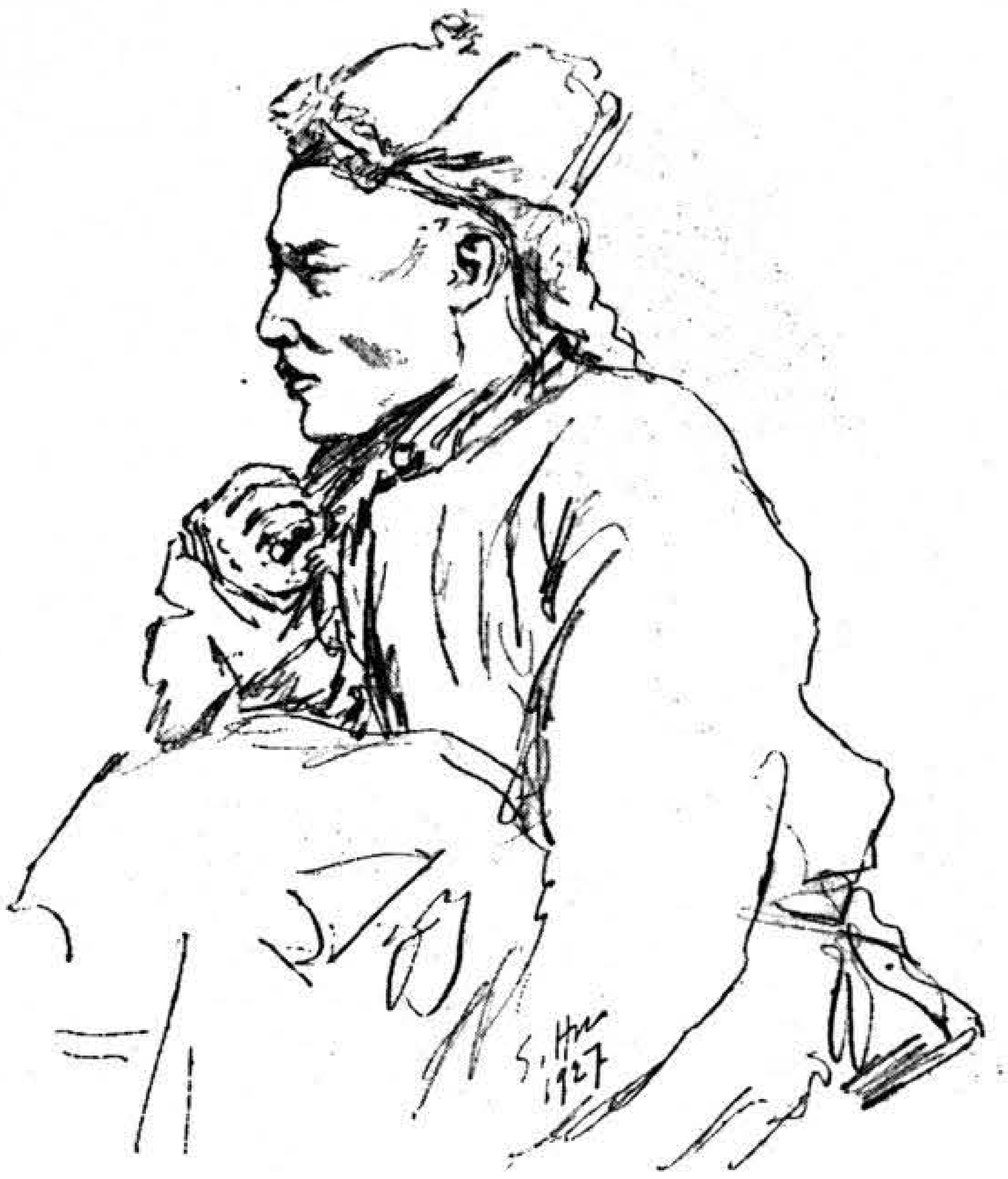


Fig. 8. Young Edsen-gol Torgut, the son of Targhan Tserchi

TWO EXCURSIONS START

On October 4th Huang, the archaeologist, set out on a twenty-five days' excursion down to Ghashun-nor and the tract to the south-west of this lake, where he hoped to find the town of Chü-yen, mentioned in the older Han-annals.

On October 5th Hempel and Zimmermann started out on a little excursion along the river to the north-east. We had heard talk of a mud house on the left bank, that had been built by a Chinese merchant and was now owned by the prince of the Torguts. It might prove suitable as a store-house for station I, which in this case ought to be established there. However, the house turned out to be unsuited to the purpose and a new excursion was planned to the lakes to see whether a better site for the station was to be found there than the one we had already marked out at Tsondol.

All these excursions and future plans entailed long conferences, for our expedition was, it must be remembered, an intricate and complicated piece of machinery, and all preparations had to be made as wisely and effectively as possible.

THE CAMP-FIRE

Every evening, after supper, Larson lit the huge fire of dry tree-trunks he had got his Mongols to collect. Felt mats were then spread out in a semi-circle on the side nearest the wood, and here we made ourselves comfortable.

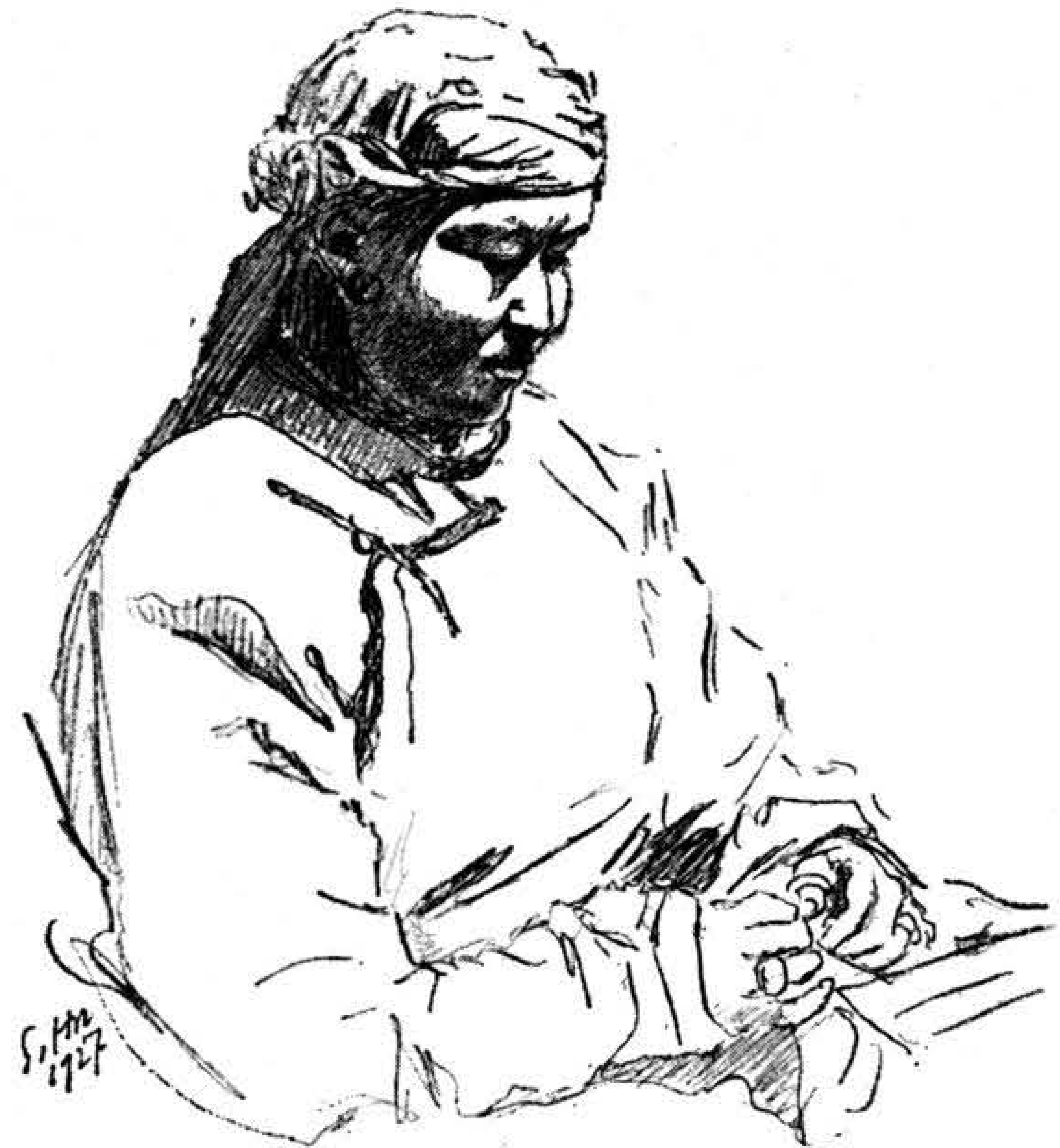


Fig. 9. Mongol woman at Tsondol

As the autumn advanced and the evenings grew colder, LARSON'S fires became more and more popular. They were gradually made the centre of a sort of open-air common-room or club; and the only ones who were ever missing were those who happened to be busy making observations or listening in for time-signals from Nauen. It was round the camp-fire that I had my conferences with the members of my wandering town, and it was there, too, that instructions for the next day's activities were given. Work being over for the day, some would lie on their bellies, reading, while others wrote letters or made entries in their diaries. Generally, the gramophone would be played, and now and then DETTMANN strummed on his mandolin. When BERGMAN came we also had singing with accompaniment on the guitar. The orchestra of the Mongols, comprising a flute, a stringed instrument and a singer, sometimes entertained us with quite lovely melodies, full of Asiatic atmosphere. On festive occasions, or farewell evenings for members who were about to leave camp for work in the field, speeches were given in the flickering light of this lovely camp-fire.

Whatever Fate might afterwards have in store for us, we felt, we should always cherish grateful remembrances of the carefree evenings on the bank of the Edsen-gol, the bright hours spent in the glow from the fire.

MENTU looked after the heating of my tent, so that when I left the camp-fire to return to my writing-table he had always anticipated me with a shovelful of glowing embers. When I sat up late he would return at intervals with a fresh shovelful from the fire.

COOLER WEATHER

On the morning of October 7th there was a thin sheet of ice over the water in my basin, and one felt a snap of chilliness still lingering on the ground and in the air. MENTU's shovelful of embers was therefore already welcome in the morning.

One noticed that the autumn had entered a new phase. The leaves of the trees had been yellowing more and more, and now they also began to fall. The yellow leaves lay around the mess-tent and inside it, and rustled pleasantly underfoot. The carpet they formed was a decorative element in our surroundings, and it was a pleasure for the eye to see this gilding, not only of the remaining foliage on the trees, but also of the ground.

One of the first results of the sinking temperature was that winter clothes were unpacked and summer attire was stowed away. At nights, too, one could hear the honking of wild geese flying south over the broad bed of the river.

DOUBLE TENTH FESTIVAL

On October 10th, (»the double tenth»), our Chinese celebrated the sixteenth anniversary of the Chinese Republic. Burning speeches were given by Professor SIU and the students; there were declamations and music; and all kinds of sporting events as well as more amusing items such as sack-races, etc. were arranged, in which Europeans, Chinese and Mongols all took part. The day took on the character of a general festival, and a special menu was drawn up for dinner.

EXPEDITION TO MAO-MU

The inventory of the provisions showed that our supply of rice, sugar, flour and candles was drawing to an end and would have to be replenished before we set out on the long journey to Hami. The nearest place where these articles were to be got was the little town of Mao-mu, called by the Mongols Mo-ching, and situated on the right bank of the Edsen-gol 223 kilometers to the S. S. W. of Tsondol. Accordingly, on October 13th, MARSCHALL, LIU and MA set off for Mao-mu with a Chinese camel-puller and seven camels to make the necessary purchases. At the same time they were to fetch the mail from Peking that SIU and the other Chinese members were expecting. I, too, looked forward to the arrival of these letters with a certain feeling of suspense, for I had written from Khujirtu-gol to our committee in Peking to submit some important proposals, to which SIU had also appended his signature, and to these proposals we might now expect a reply.

The letters that SIU and I sent off jointly to the post-office in Mao-mu were no less important for the future of the expedition. After careful deliberation as to

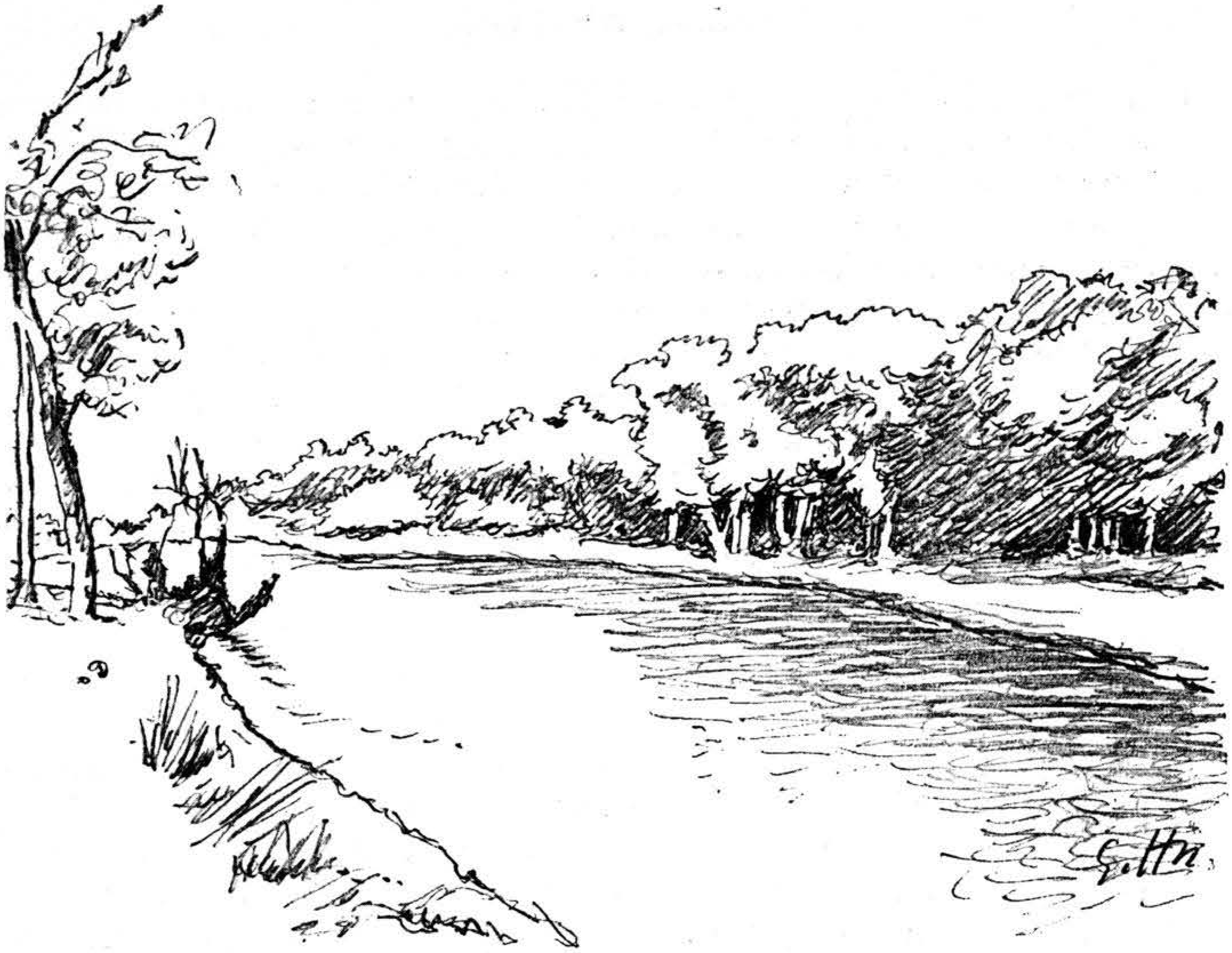


Fig. 10. The river immediately below Tsondol

their contents they were written by Siu, who then let me have them in French translation.

In order to ensure his protection of the Edsen-gol station we also wrote to the governor of Kansu, informing him of our aims and adding some details concerning the station on the bank of the river. »We have for long known that you are a benevolent patron of science and art. We trust that you will not withhold your sympathetic interest from our plans. We hope that you will give orders to the local authorities and the authorities of the different *jasaks* to give their special protection to the station, which would very much oblige. . .» etc.

Finally, we also drew up a document for the benefit of the powerful governor of Sinkiang, Yang Tseng-hsin. After a short preamble concerning the scientific aims of the expedition and our journey to the Edsen-gol we informed him that it was our intention shortly to proceed to Hami and thence to Turfan and Urumchi. »In Hami we wish to establish a station for the observation of meteorological phenomena. We know well that you always give your strongest support to science, and we trust that our enterprise will also meet with your sympathy and interest. We should be exceedingly grateful to receive a message to the effect that you had been pleased to instruct the authorities along our route to afford us their help and protection in case of need. On our arrival in Urumchi we shall pay you a visit in the hope of listening to your wise counsel. We have deemed it desirable to send you this communication in advance.»

DESPATCH OF A COURIER TO URUMCHI

Our travelling funds were unfortunately beginning to run low. We should have enough for what we might require till we reached Hami, but there we should need more money. I had deposited a considerable sum in Urumchi, and now wished a part of this to be transferred to Hami, so that we might proceed from the latter town to Urumchi without having to worry about funds.

Not less important for all of us was the question of the formidable mail that had doubtless been accumulating for months in Urumchi. We should be arriving in Hami at least a month and a half earlier than in Urumchi. How splendid it would be to receive our post and our Christmas letters already in Hami!

I had therefore given WALZ instructions to set off for Urumchi on October 15th as our courier. He accepted this difficult commission with a delight and a gratitude that he was unable to dissemble. WALZ, who was a Bavarian, a prominent alpinist and sportsman, was a perfect picture of concentrated power and energy, a man of the type for whom no difficulties exist and who love wild and neck-breaking adventures.

The distance between the Edsen-gol and Hami as the crow flies is 660 kilometers A further 550 kilometers separates the latter town from Urumchi. Thus, by the time WALZ had returned to Hami he would have covered no less a distance than 1,760 kilometers. Actually, however, counting all the twists and bends in the route, his journey would amount to 2,000 kilometers or more.

WALZ was to be accompanied only by the Mongol TSERCHI and the Chinese boy who had lost himself in the sand near Khara-dzagh.

Forty days, at the rate of thirty or forty kilometers a day, ought to suffice for the journey to Urumchi. On this reckoning he ought to arrive in the latter town on November 25th. Five days would probably be enough for his business in Urumchi, whence he could then ride to Hami in a matter of fifteen days, thus arriving on December 15th at about the same time as ourselves. So, at least, we calculated; but much that we could not foresee was to happen in the interim.

At seven o'clock on the morning of October 15th we were all up and dressed to bid our courier god-speed. Fat and flourishing and all ready for the start stood WALZ's eight camels under their light loads. One of them was white and had been with us from the outset. Some were newly purchased and had no long and tiring desert marches behind them. All, however, were in splendid trim.

A hearty farewell grip, and the three men with their light little caravan disappeared between the poplars and tamarisks of the wood.

LARSON's BOAT READY

After the departure of MARSCHALL and WALZ on their several ways with all my letters my time was no longer taken up with the business of correspondence, and I was able to turn my attention to my projected trip to the lakes. Accordingly, as soon as I had seen WALZ off on his long journey I went and inspected LARSON's wonderful boat, which had now lain a-drying for long enough. Together with HASLUND I went for a trial trip on the river. It was a bumpy voyage. The boat was still too heavy and it lay too deep in the water. The deck had to be taken off and the canoes chipped out to about half their thickness.

LARSON set about the task immediately. The work went on all day and was continued in the evening by the light of the camp-fire. Glowing coals were placed in the bottoms of the canoes, which were then easier to hollow out. So the work went on the whole of the next day, and the heaps of chips and shavings grew up apace around the carpenters. The 17th of the month had been fixed for the start. We had no time to lose, for the river had already begun to sink.

The canoes were now forty-five centimeters in breadth at their widest part, about at the water-line, and at the gunwale thirty centimeters. They were separated from each other by a distance of thirty-five centimeters, being joined by means of two strong cross-pieces. The lid of a crate was laid over the interval between the prows. This was to be my mapping and writing-table. Between the inside gunwales of the two canoes was placed a wooden plank upon which I was to sit, with one leg in each canoe, and for the rest — suspended as it were over the water. HASLUND, the crew, had his place on another little cross-plank in the stern, where he had his paddle at hand. In this tub, then, we went for another trial trip on the 16th, and found our craft much lighter and more seaworthy.

As our little craft could not be weighed down with any baggage, LARSON was to follow on the left bank with a little caravan, keeping in constant touch with us and determining the camping-sites in concert with us. Professor SIU and LI were to accompany him, as they both wished to see the lakes. HEMPEL and ZIMMERMANN were also to make their way to the lakes with their own little caravan, charting the western arm of the lower Edsen-gol, which is called the Oboin-gol, and on their return journey the arm that was said to flow furthest east.

When we started off on the 17th we had only the barest essentials with us: mapping-block, compass, watch, pens, field-glasses. HASLUND, who had to be in and out of the water, even entrusted all his clothes, with the exception of a woollen jersey and bathing-drawers, to the caravan.

We pushed off and drifted on the current, gliding at a pleasant speed down the Edsen-gol. The banks hurried past, with their yellowing groves, their dense tamarisk copses, their stretches of grass or reed-covered plain and now and then naked or bound dunes, the latter generally with vertical sides sharply cut off by erosion. We had not progressed for many minutes before we realized that the only navigable channel was precisely along such sharply eroded banks, so we manoeuvred our unwieldy craft, as often as we could manage it, quite near the bank.

But the current often went over from the one bank to the other, and we were then obliged to cross the river-bed diagonally. It was just when navigating such stretches that we generally stuck fast, for there lurked the most treacherously concealed mud-banks. On these occasions our craft went grating onto the sand, swung round, and HASLUND hopped in to wade about for deeper water.

Meantime, I sat at my observation table, drawing my chart of the river's course. One had to keep one's wits about one for this job. Like all other rivers, the Edsen-gol follows a winding course, and it is seldom that a bearing holds good for more than a minute. I was therefore obliged to keep my eye on compass and watch the whole time, and draw uninterruptedly. Other necessary notes and observations were jotted down at lightning speed. Time and again I took the speed of the current in order to calculate the length of waterway we had covered.

On a couple of occasions we glided past long islands. Just after three o'clock we had reached the point where the Edsen-gol bifurcates to form two arms of apparently the same size. The left one is the Oboin-gol, which disembogues in Ghashun-nor, the right is called the Dunda-gol and flows into Sogho-nor. The Dunda-gol or Middle River was said to be narrower and deeper than its western neighbour, so I had decided to chart it first.

Accordingly, we glided into the Dunda-gol. On the left bank, a little ahead of our boat, rested a flock of wild geese. They turned their heads in our direction, rose into the air and flew off southwards. One heard the rushing of their wings as they flew past, marvellously lit by the sun.

The farther we progressed, the narrower did the Dunda-gol become, and the less frequently did we run aground. The business of navigation became easier for HASLUND, who needed only to sit where he was and steer with his paddle. His wading was now so spaced out that he had ample time to dry between his dips. We were now making splendid progress. Sometimes, in a sharp bend, the current threatened to bump us against the bank; but I had a slender pole at hand and could thrust off.

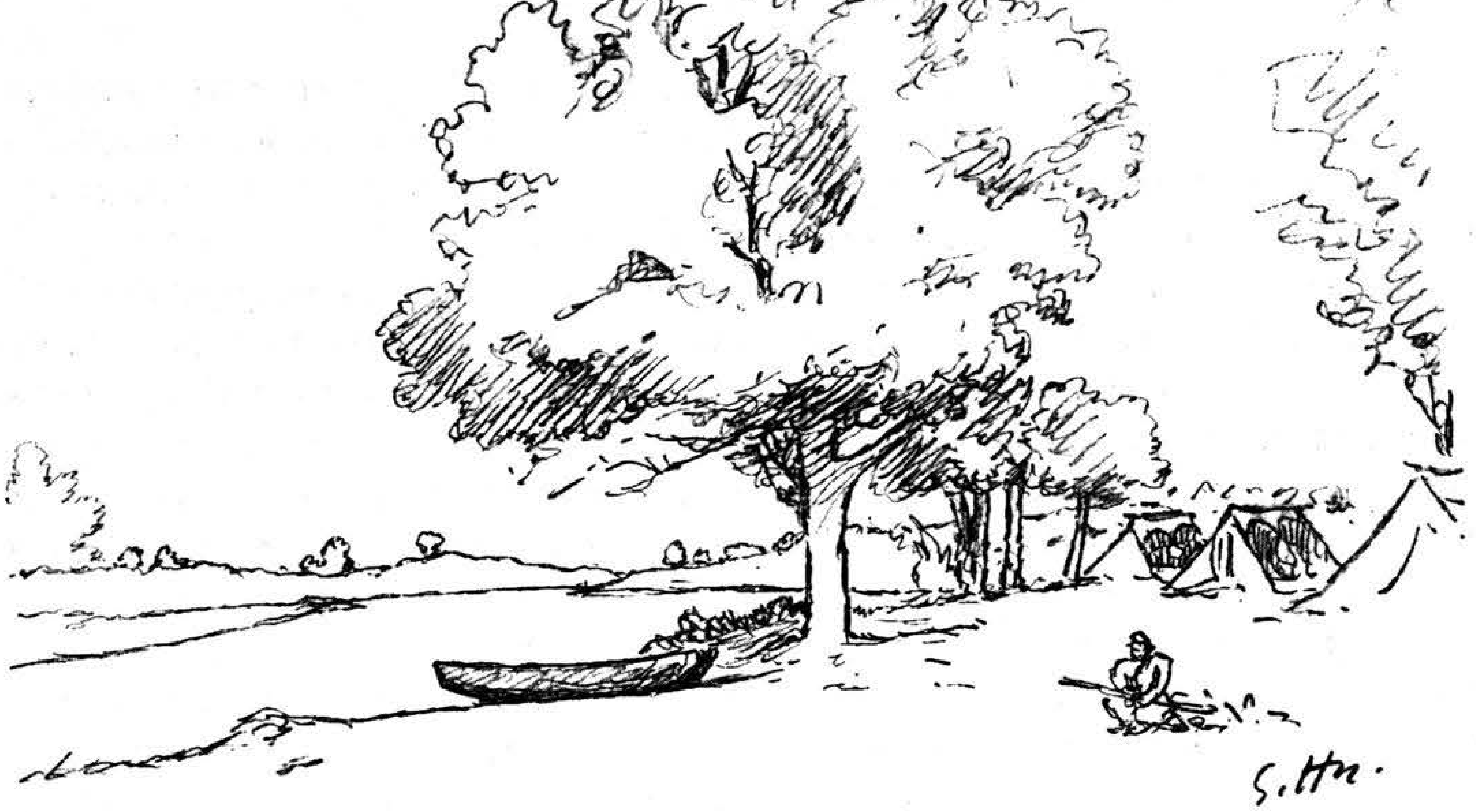


Fig. 11. Our first camp on the boat-journey

The river was deep here and only fifteen meters across. It resembled a canal, and its bed had no room for mudbanks. The left bank fell steeply, the right more gradually. On either side were dense woods. We landed and made fast for the night.

The river was so deep and narrow at this camping-place that at a distance of about ten meters from the bank one did not notice it. It seemed to disappear in the green wood.

We had had a lovely summer's day without wind. The landscape was enchanting. One was all eyes. Time and again wild ducks and geese rose up into the air from the banks, while the pheasants sat where they were, peeping out at us from their hiding-places under the tamarisks. A vulture hovered over the river. The belt of wood on the right bank was in some places interrupted by bound dunes. On the left bank the ground was more even, here and there covered with grass and reeds growing shoulder-high; and in such places one saw browsing cattle, horses and camels.

On the morning of October 18th a hard wind was blowing through the wood and the leaves were falling like flakes in a snowstorm. The sky was covered with clouds and the air was heavy with dust. This autumn-like weather was anything but inviting.

After a couple of hours on the water HASLUND, who had to jump in every time we went aground, was so chilled that he sat on his plank in the stern with chatter-

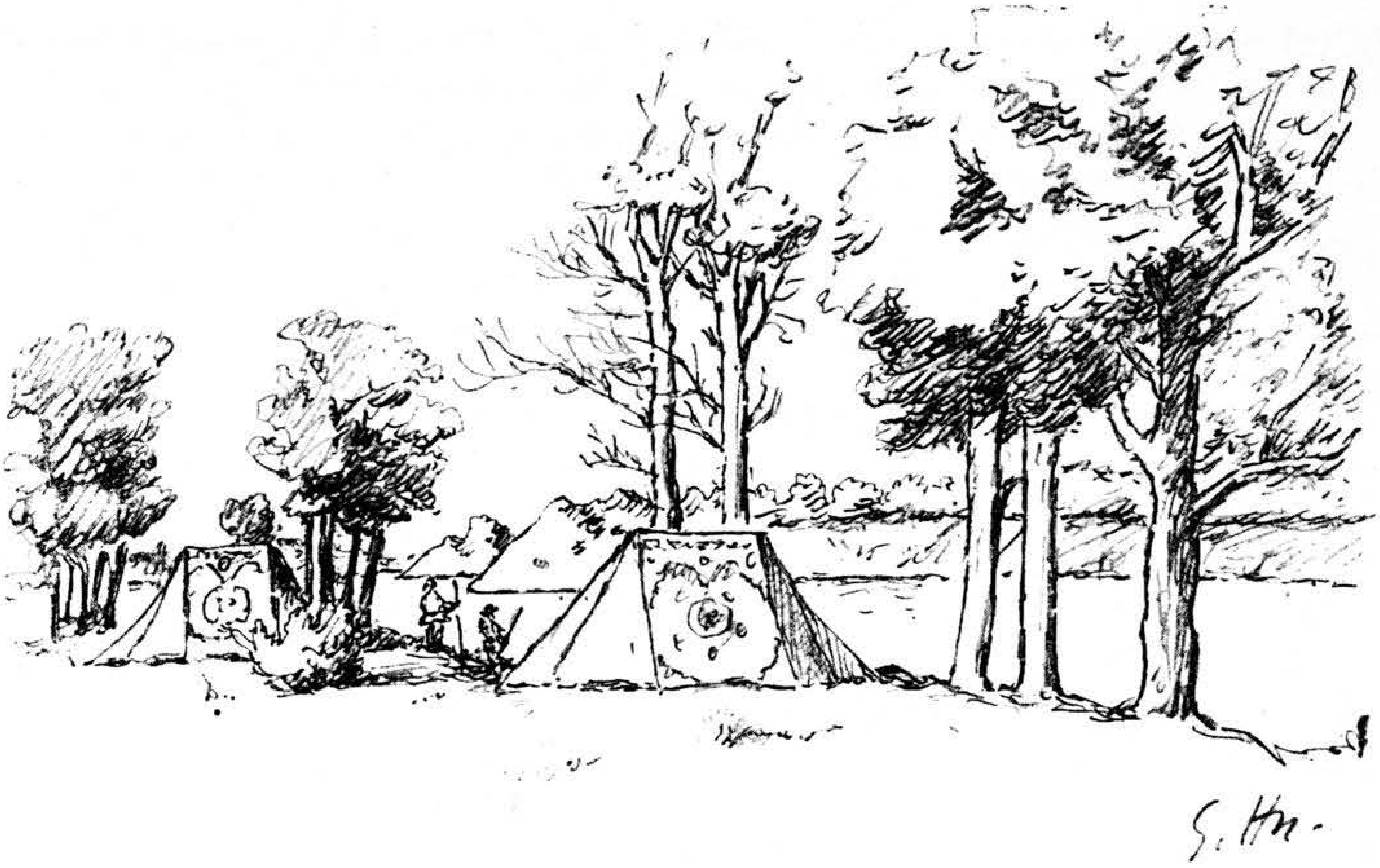


Fig. 12. Camp on the Dunda-gol

ing teeth. We therefore put in to the bank and took a twenty minutes' rest in front of a blazing fire.

At twelve o'clock we reached a spot of unequalled beauty and charm. Perhaps I exaggerate, and it may be that our delight was due to the fact that for months we had been travelling through the vastest desert region in the world. If this little stretch of the Dunda-gol had been situated in India or in Sweden we should presumably have been not so struck by it. But we were not spoiled in respect of idyllic landscapes. It seemed to us that the meandering river had borne us to a fairyland and an enchanted wood.

The river was no more than twelve or fifteen meters in breadth, and for a good twenty minutes the current flowed in an almost straight line northwards. Here, especially, it resembled a cut canal between steep and vertical banks two and a half meters in height, that in places — where they were root-bound — were even overhanging. On the banks grew dense woods of magnificent poplars. Here and there the interlacing branches actually formed an arch over the river. It was like gliding into a tunnel with inlet golden mosaic in the roof. The shades of yellow stood out brilliantly, even in the diffuse light that seeped through this natural roof. We glided silently and slowly into the recesses of the wonderful wood. One had impulses to shriek with delight. We used up all the most potent expressions in the Swedish and Danish languages. Only occasionally did my sailor need to dip his paddle to keep our vessel parallel with the banks. Otherwise we simply drifted with the current. One felt nothing of the hard wind in this peaceful passage where the wood and the high bank on our left gave us impenetrable protection.

By lunch-time, at one o'clock, the enchanted wood had come to an end; the river widened and became as tortuous and winding as before.

We were probably the first to navigate the river, unless the generals of the old Han emperors transported war materials and supplies on the Edsen-gol during their wars against the Huns. But of this we know nothing, and the annals are silent on the point.

At last the sun went down, and night began to fall over a new camping-place. We sat round the fire and talked. Over our heads flew two flocks of wild geese. We did not see them, but we heard them honking. They seem generally to fly at night — just like the Chinese merchant caravans to Guchen, and possibly for the same reason — in order to be able to pasture during the day.

On the following day we found that the river had sunk a few centimeters. Here and there we passed browsing cattle on the grassy patches on the banks. The cows stood and stared at us stupidly, but a herd of horses swung round sharply and dashed off between the bushes in a cloud of dust. The same astonishment was shown by three camels drinking at the water's edge.

The breadth of the river changed frequently. Sometimes it was all of seventy meters, at sharp bends often scarcely ten.

Suddenly there was a change of scene. The wood came to an end. A few odd poplars formed its outposts lakewards. The tamarisks, too, became sparser. On either side stretched a grass and reed-covered plain. Between the two rivers Dunda-gol and Oboin-gol there rises here an isolated, gravel-covered plateau, and on this the prince of the Torguts has his yurts and his *yamen*. Not far from the prince's settlement rises the little temple Dagelin-gompa. We pitched camp on the bank below the plateau.

Three novices in the temple, brisk and lively fellows, showed surprising gaiety. They were really as little shy as could be desired, and darted about between our tents like tame squirrels. When HUMMEL and HASLUND had been here on their botanical tour they had made acquaintance with the novices, and it was comical to see the pleasure with which the latter now renewed acquaintance with HASLUND, taking him familiarly by the arm and calling him »Hassloun».

THE TORGUT PRINCE

On the morning of the 20th we sent MATE LAMA to the yamen of the Torgut prince to enquire when he would receive us. By twelve o'clock our messenger had still not come back with the answer. We knew that the prince was old, blind and deaf, that he spent his days on his back and never received guests. But his son, a

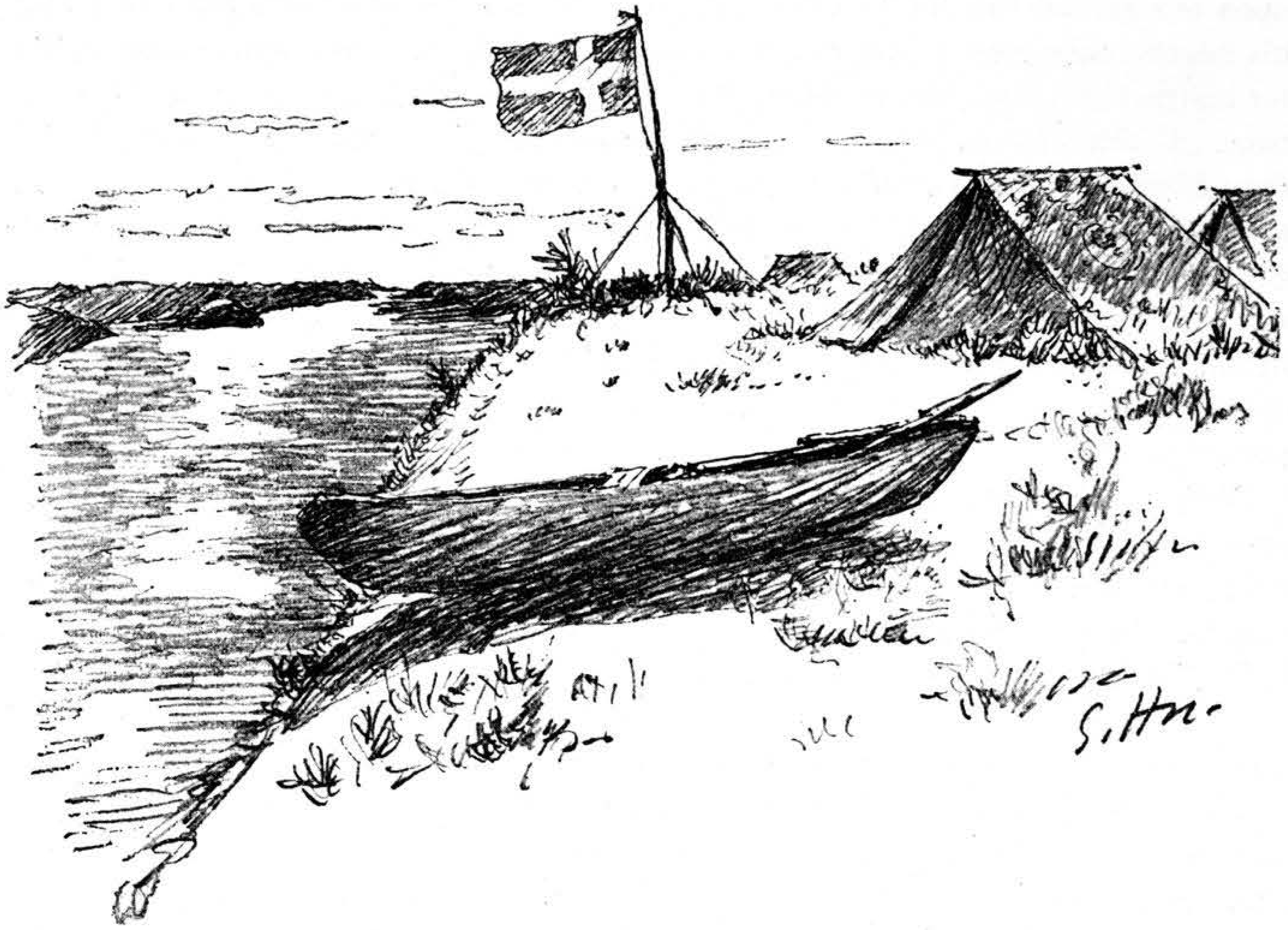


Fig. 13. Camp on the lower Dunda-gol

man of forty-five, who managed his father's business and looked after all the affairs of the tribe, was up and about and had received HUMMEL and HASLUND two weeks previously.

Early in the afternoon MATE LAMA came back with a rather strange answer from the prince. The message was to the effect that he could not receive us on that day, which was the twenty-fifth in their month, as this date was not a happy or suitable one for a visit. He would send a courier to our camp on the 28th or 29th, wherever we happened to be, and let us know which day suited him. We thought this answer almost insulting. Did he really imagine that after four days, when we should probably be far from his residence, we should turn back for the sole purpose of paying him a visit, when he had refused to receive us when we were camping practically at his doorstep. SIU opined that a little chief of ninety-seven tents was not superior in rank to the magistrate of a small Chinese town, and that it was incumbent upon such a princeling to be polite when the leaders of a great expedition came to his territory. But on the other hand the man could hardly be expected to know what sort of people we were, political agents, spies or white robbers. LARSON was of the opinion, and SIU shared his view, that immediately upon our arrival the chief had sent a courier to the Chinese authorities in Kansu, his nearest superiors, to ask how we were to be treated. And now he was waiting for instructions, and was therefore forced to give us an evasive reply in the meantime. If this was really how the matter stood, the prince was rather to be praised than blamed, for it showed him solicitous for his country. Perhaps, again, it was a question of politics. It was believed that half the Torgut population sympathized with the Outer Mongolian republic, and might declare itself for the latter at any moment. Siu, however, gave no credit to this suggestion, pointing out that in this case precisely the prince himself would lose his title and his dignity. He was doubtless conservative and loyal to China, and unwilling to part with the little power he had.

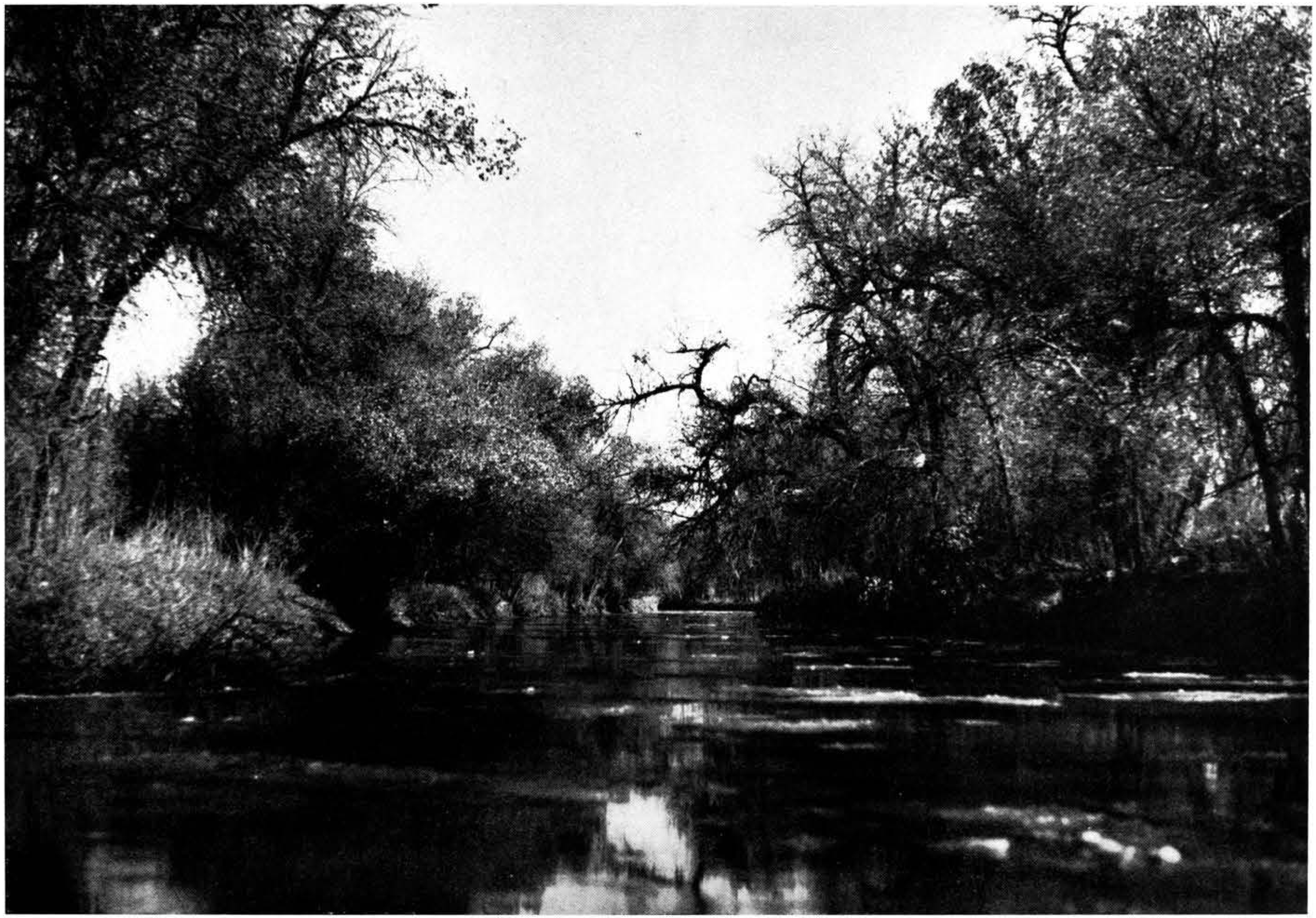
Of course, he had every reason to be suspicious when one fine day thirteen well-armed Europeans and seven Chinese suddenly swooped down on his peaceful neighbourhood like a swarm of locusts, with a caravan of a couple of hundred camels. Such a thing was quite unprecedented. China was, it must be remembered, in a state of war — and what could be the meaning of our sudden arrival? Very disquieting rumours of our caravan had preceded us, exaggerated to gigantic dimensions by Mongols and Chinese merchants. It was said that a whole army of soldiers was on the way, that we had immense caravans, whole towns of tents and an arsenal of weapons. And sure enough, first came the advance guard and took up its position on the bank of the river; and a few days later a new large contingent. This was obviously a serious business of a military character. The prince had indeed every reason to be cautious.

We decided to use consideration and to go about the matter circumspectly. We would inform the chief in all friendliness of our intentions and our desire to establish a station in his district. Siu put this into writing, and leaving aside a preamble consisting of courtesy-titles and expressions of politeness the letter read as follows:

»We have arrived this day at your camp exclusively for the purpose of paying you a visit. To our profound regret we hear that the day does not suit you and that we cannot meet you personally. Our expedition, which is under the protection of the Chinese Government and the Federation of learned Societies, is on its way through the northern parts of Shansi, Kansu and Sinkiang to make scientific investigations. It is also our intention to establish meteorological stations near Sogho-nor, in Hami, Urumchi and other places to enable observations over a number of years of rainfall, winds, temperature etc.

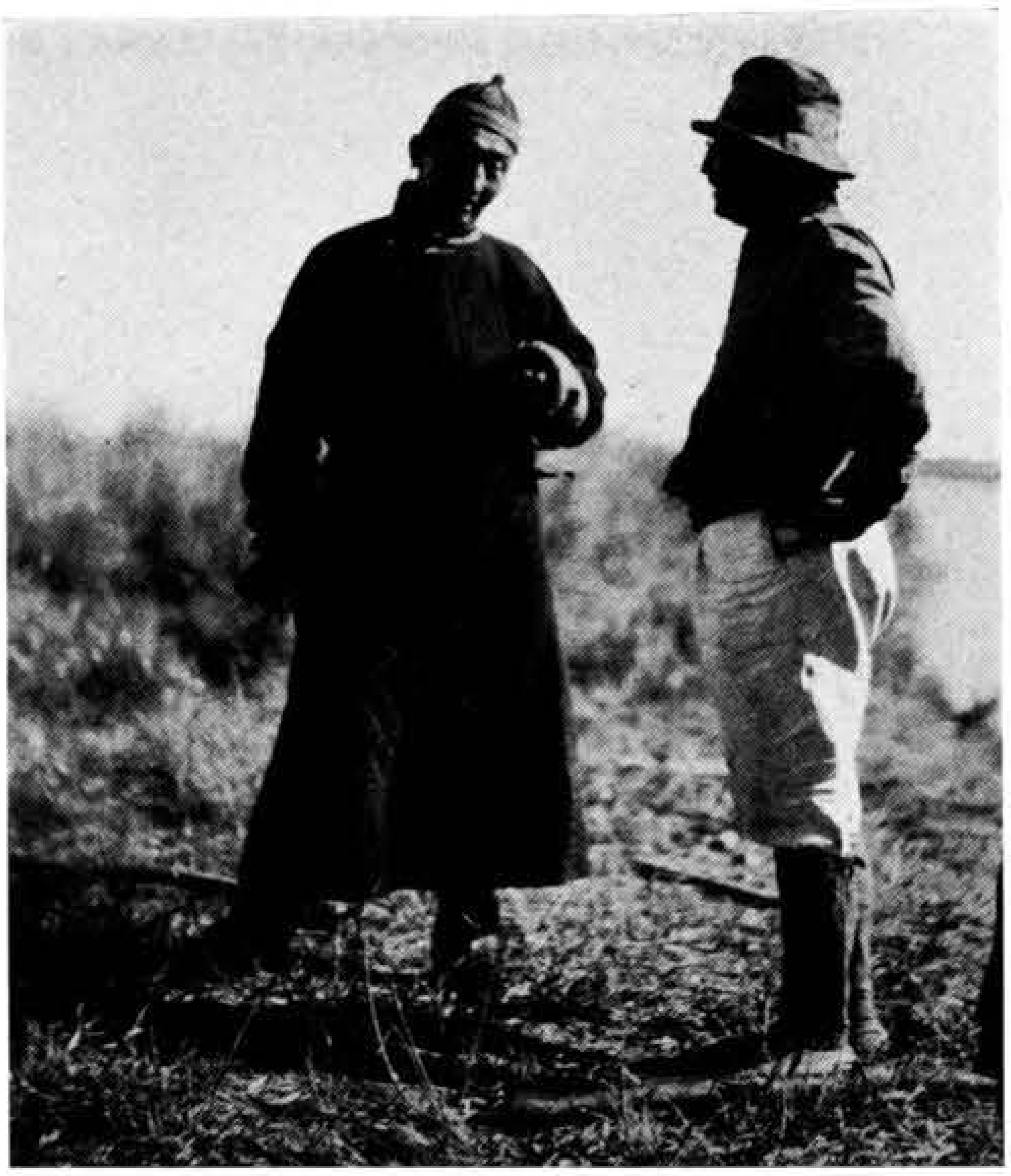
We have now arrived at the left bank of the Edsen-gol and have already set up our station. We therefore consider it to be our duty to visit Your Highness and your officials in order to explain all our intentions to you and to crave your protection for the station. As our expedition is an organization for scientific research, all the members are learned and educated men. Politically we belong to no particular group or party, and the function of the station is purely scientific. We have no intention whatsoever of occupying ourselves with politics. Dr Sven Hedin has for twenty years been the good friend of the Panchen Huo fo (Tashi Lama), and has frequently travelled in Tibet to explore the country. On these occasions he has always enjoyed the greatest hospitality at the hands of His Holiness. Now, too, he has several times visited His Holiness in Peking and informed him of the plan to visit these countries. His Holiness has lent his encouragement to the plan in every way.

Professor Siu Ping-ch'ang has great respect for the yellow religion. As regards the staff of the station, we can guarantee that it will in no way flout the customs and traditions of the country nor cause any damage to temples, stupas or obos etc.



The enchanted wood on the Dunda-gol

Lieberenz Photo



Lieberenz Photo

The ruler of the Edsen-gol Torguts and the author

Lieberenz Photo

Larson hauls the 'boat' ashore after our crossing of Sogho-nor

We now wish to state that we should appreciate being received by you. If this cannot be arranged we beg herewith to inform you that at the end of this month or the beginning of next we intend to continue our journey to Sinkiang.

If we, Sven Hedin and Siu Ping-ch'ang, who bear the whole responsibility for this expedition, are not able to meet you this time, three members of our expedition will fortunately be staying on here, and they will be prepared to pay you a visit at any time so that no misunderstanding may arise. Moreover, all the members of the expedition that have arrived here are provided with passports from the Foreign Office and from the Ministry of Education in China. If you should so desire, we beg you to send one of your officials to our camp with an authorization from yourself to inspect the passports.»

The letter was sent with Mate Lama, who came back after some time had elapsed, followed by a *tushimel* or secretary and another official. The former told us that the prince certainly had an interpreter, but no-one who could read Chinese. Our clever Mongol Tserat therefore translated the document to Mongolian to the two deputies, who thereupon took their leave. For the rest of the day we were left to wait.

The prince's secretary had at least been exceedingly courteous, and conveyed the oral message from his master that we were welcome to go wherever we chose and that we were at liberty to do whatever we liked, but that if we intended to venture on the lakes in a boat we should be careful, for there was much water there!

VISIT BY THE SON OF THE TORGUT PRINCE

The water had sunk 5.5 cm since our arrival. The temperature during the night was — 0.5° C. In the clear morning air, with turquoise-blue sky and glittering yellow steppe, our Swedish flag outside my tent was wonderfully well set off.

The son of the Torgut prince came to visit us. He handed me a light-blue *khadak* and a red visiting-card from his father. The name and title of the latter was given on the card as Chün Wang Dashi. The district was given as Edsina, to which was appended Old Torgut.

The son was the real regent in Edsina. He was a tall, strongly built man of attractive and likable appearance, and polite, soft and refined in manner. We drank tea and exchanged the usual courtesies. If we were really anxious to see the old prince we should be welcome, but he was sick, and only his intimates and a couple of servants were allowed to go in to him. We said we did not wish to disturb him, and conveyed only our greetings and respect.

He begged to have our letter of the previous day translated once more. He repeated the assurances that we were completely at liberty to follow our own devices and that the station might remain here as long as we liked.

He asked if there was any way in which he might now be of service. Yes, we should be very grateful if we might hire an ox-cart to take our boat from Soghonor to Ghashun-nor and afterwards up to the wood, that Lieberenz was to film. He promised to arrange this.

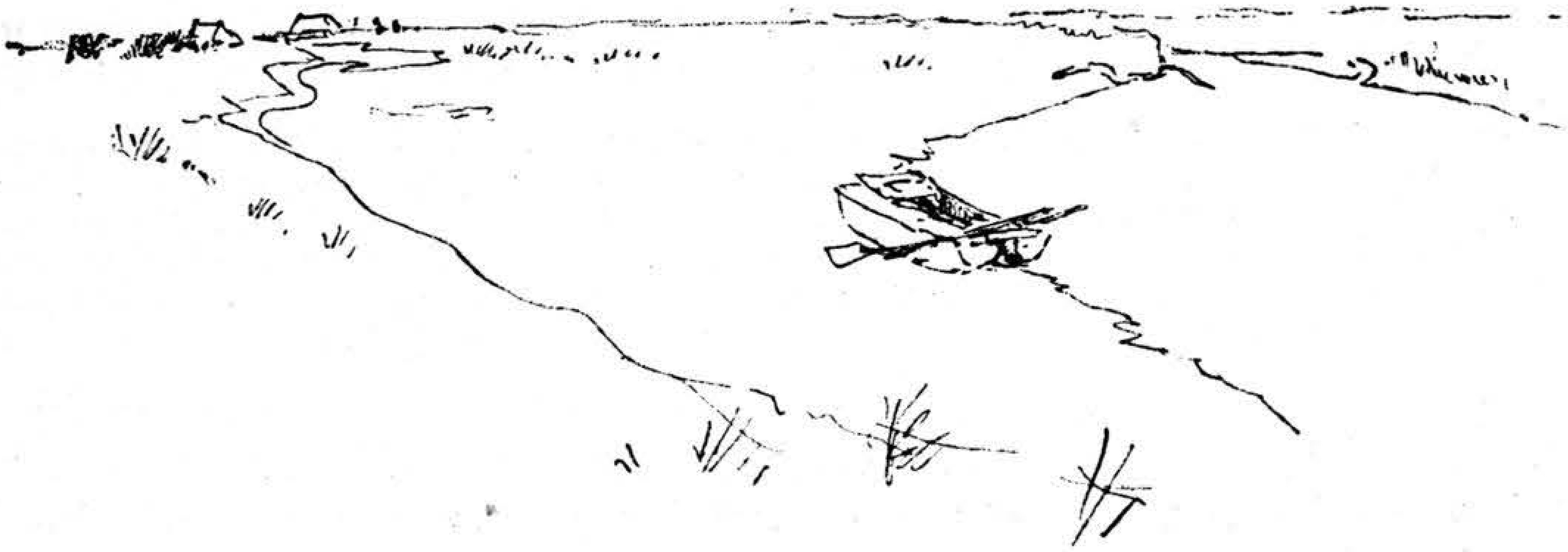


Fig. 14. Surroundings of the camp on October 19th

Finally, I stated it as my express desire to be allowed to recompense him for the damage to his pastures by the camels we should be leaving behind over the winter, and I begged him to tell me if there were any foreign article that he desired, that I would then send him through the head of the station. He answered immediately that he would very much appreciate a really good pair of field-glasses (an article, by the way, that is very highly valued by Mongols).

REACHING SOGHO-NOR

As soon as the Torgut prince had ridden off we hastened down to the boat. We had not drifted for half an hour before we reached the point where the Dunda-gol divides to form two arms. The left one seeped through a marsh, against which we had been warned; the right arm became very narrow and winding and had a little waterfall. The latter was found to be three meters across and had a fall of one meter. The banks formed almost vertical walls of two or two and a half meters in height. After leaving the boat to negotiate the waterfall by itself we continued drifting down the narrow and winding channel. We were swept at a terrific speed down some small rapids, and had our work cut out to keep our crazy vessel on a straight course. In one of the rapids we did not manage to clear the boat. It swung round broadside on and stuck fast. The water threatened to fill one of the canoes, but HASLUND succeeded in getting clear and the wild race commenced again.

After our arm had received a contribution of water from the left arm the breadth increased to from twelve to twenty meters. The vegetation on the banks grew thinner. Finally, the countryside was completely sterile and large areas were covered with dried and cracked mud.

When we had voyaged for three hours we put in to the bank and rested for a while. Presently the land began to come to an end and the river split up into several streams. At last we had the countryside behind us and Sogho-nor gleamed ahead to receive us. But we had a long way to go to reach pure blue water. Outside the little delta lay an obstacle, a mud-bank where the depth was only five centimeters. HASLUND got out to reconnoitre, till he suddenly sank down in soft, blue-black mud, and had quite a struggle to free himself. The boat was taken back to firm ground to a point N. W. where LARSON and MENTU were digging a canal from the bank through which we might come out to sufficiently deep water. They were assisted by LIEBERENZ, who had just arrived from the main camp.

CROSSING SOGHO-NOR

The 22nd October dawned with a brilliantly clear sky and still air. HASLUND carried me out to the boat, which could not be brought inshore. We were very lightly equipped. In one of the canoes was a cake-box filled with rusks that our cook had learned to bake at a Swedish mission-station, and a couple of tablets of chocolate. In the other canoe we had cigarettes, 1st aid articles and a little flask of cognac that the doctor had prescribed in case we should be constrained to drink the salt water of the lake. In addition I had a large thermos-flask of tea. The lake looked very diminutive, and we thought we could manage a cruise to the eastern shore and then have time to row in a couple of hours to LARSON's camp at Boro-obo on the north shore of the lake.

HASLUND was wearing a sweater, a hunting-jacket and swimming-trunks, but took no other clothes, not even shoes and socks. I had only my usual travelling attire but nothing warmer. Finally, we took a pole belonging to a camel-saddle and my stick in order to be able to raise a mast with yard in case of wind.

At a depth of 33 centimeters our vessel floated, and HASLUND set to work with his paddle. As soon as it began to blow a little we raised our improvised mast. We had nothing else for a sail but my leather vest. We set our course by a landmark on shore in N. 80° E. We drew nearer the blue fields that were not reached by the mud of the river. Where clear water began the depth was 1.35 meters. The breeze freshened. Out on the deeper and clearer water one saw only here and there flocks of sea-birds, Mandarin ducks, grey and white gulls, swans and a black bird with a red bill. So much the more numerous were they on the shallow water. They were continually flying past us to skim down with a rush of water onto the surface of the lake, and when we approached a swimming flock the whole lot rose with a whir of wings.

Sogho-nor is shallow. My punting-pole measured 2.53 meters in length, and except for the middle of the lake, where we noted a greatest depth of 2.9 meters, it was everywhere sufficient to touch bottom. A little white disc fastened to the end of the pole could be seen down to a depth of 1.2 meters. The bed of the lake was quite hard.

The wind increased in strength, and the waves began to break into the canoes. Presently I was sitting with my feet in water. I bailed with a scoop as hard as I could. HASLUND used his paddle to smack down the highest waves to weaken their impact. Sometimes the bailing seemed quite hopeless, and I began to wonder if I was emptying the canoes quicker than they were filling. If the wind had increased by one iota more the lake would have been the victor. But all went well. The depth diminished again to a meter or less, and in case of need we could have waded ashore. For safety's sake, however, we changed our course to due east, where we had the wind in our backs and could bail more effectively.

At a quarter past four we bumped aground in shallows near the east shore. From here we had seventy meters to reach dry land, and once more I was carried on HASLUND's strong shoulders. We had covered between fifteen and sixteen kilometers as the crow flies.

While HASLUND bore our belongings ashore I commenced to collect fuel on the beach. It was not so easy to kindle a fire in the wind that was blowing. Soon, however, the wind was snatching gusts of smoke, and we went on gathering twigs and branches. This was now the most important thing of all, for the sun had just set. If I had not been guided by the smoke I should scarcely have found the way back to »the camp».

Apart from inconsiderable unevennesses caused by the breaking of waves when the lake is fuller than usual, this shore is as smooth as a floor, and its surface is here and there white with soda deposited from the water of the lake. In such places one finds dead reed-stubble and long broad streaks of dried and tangled algae forming grey, soft flags. We were unable, however, to get these to burn.

There were innumerable wolf-tracks on the shore, many of them quite fresh. The beasts evidently came to drink just here.

We sat down and calculated how we should divide up our supply of fuel into different heaps for the night-watches. Towards morning it would be bitingly cold. Sleep was quite out of the question. I had no extra clothes and HASLUND hardly any clothes at all. We decided to make ourselves as comfortable as possible beside our fire and sit there chatting over new conquests of the desert. There would be no need for tedium, but ugh! how we should freeze!

Meantime, however, LARSON had noticed that we stayed away rather too long, and took the precaution of sending a Mongol round the lake with our sleeping-bags, a blanket each, HASLUND's clothes, my Kalgan boots and a tin of preserved fish. We were thus saved both from the cold and from hunger.

After breakfast we put off again in the boat, holding a course of N 70° W to reach LARSON's camp below Boro-obo, which is the dominating height near the lake. HASLUND was obliged to row the whole time, for this time we had no wind to help us.

The otherwise uniformly shallow lake is rather deeper on this northern line; 4.12 meters was our maximum on this trip. If the water is deeper anywhere between our two lines the difference cannot be more than a few centimeters.

With increasing distinctness we saw the tents in the new camp. We saw the browsing camels as small dots. Presently we could also see the flag waving. A little after two o'clock we arrived. The crossing had taken us scarcely three hours. This second sounding-line was 11.5 kilometers in length.

The Mongols had a deep loathing for lakes, rivers and boats, and they found my trips on the water incomprehensible and insane. Professor SIU and LI had set off on their walk round Sogho-nor in the morning, but we had not seen them on account of the great distance.

The ox-cart we had ordered from the prince had been delivered in good time. It was driven by a shrivelled little old Torgut and followed by five black dogs. He was, however, on account of the unevenness of the ground and the soft sand, unable to proceed due west to the Oboin-gol, and had to start from a point that lay some kilometers to the S.S.W., where the boat was lifted up onto the ox-cart and roped fast.

That night I slept soundly in the consciousness of having spent two unforgettable days on Sogho-nor and conquered a new lake in Asia. It was well-known before, but I suspect that no-one before us had defied Sogho-nor in a boat.

MOVING OVER TO THE OBOIN-GOL

On the morning of October 24th I was awakened by the whir of thousands of birds in flight. LARSON went out to have a look, but it was too dark for shooting. After sunrise he brought down a couple of sand grouse. Later on, LIEBERENZ shot at least a dozen of these fine birds, whose flesh is quite a delicacy. A couple of his shots were really splendid marksmanship. The sand grouse flew just along the shore in dense flocks, one after the other at short intervals. They are said to leave the dry plains for the lakes or the rivers at certain times in order to drink.

After a ride of something over ten kilometers we reached the river Oboin-gol at a sharp bend, where the crown of the terrace-like bank lay 6.19 meters above the surface of the river. From here the sandy bank sloped straight down into the water at an angle of 35°.

Everybody except LARSON felt a little queer in the stomach after Sogho-nor's soda-water. Now we were longing for a taste of proper river-water. And how we drank! One cup after the other. The river-water acted almost immediately as a very potent remedy against the ill-effects of the soda-water, and I for my part became better at once.

At two o'clock the temperature was 20.°8 C., regular summer weather. The Oboin-gol was populous with wild ducks and geese. On the left bank of the river grew poplars and tamarisks. Here, too, were quite high sand-dunes, some of them naked.

We went drifting down the stream in the same way as on the sister river to the east. Here, however, we had only a short navigable stretch, and after drifting for an hour and a quarter we reached a point where a little side-arm flowed off by itself to the right. To the left, the river divided up into a series of small runnels flowing away from the main stream to form swamp and pools on either side.

We drifted on down the diminished river, which still fed little lateral arms till it finally dwindled away to nothing among the reeds. Here we turned. If we had tried to push on along one of the little side-streams we should never have been able to save the boat, and then it would have been very difficult to go back the way we had come, as the marshy ground would not bear a man's weight. HASLUND warped the boat back to camp. Sitting by the fire that evening I gave HASLUND instructions to ride the following morning to the south-east shore of the lake to ascertain whether one might transport the boat thither on the ox-cart.

Early in the morning of October 25th he set off, riding with BANCHE seven kilometers in a north-westerly direction till he came to a row of dunes. From here he proceeded for a further two kilometers N 60° W, which was as far as he could go. The lake was just as blue as Sogho-nor, and just as shallow. There were crowds of natatorial birds, including swans and gulls — an indication that Ghashun-nor, like the sister-lake and the river-arms, contains fish. It would be impossible to take the boat to the eastern shore on the ox-cart, as the wheels would sink into the soft ground.

An old Mongol who lived in the northernmost yurt of the Torgut settlement accompanied HASLUND on this reconnoitring trip. He told HASLUND that twenty-one years previously a Torgut had crossed the lake on the ice. From the point they had reached it was possible in winter-time to cross the lake in half a day, and farther to the west in one day. To go round the lake with pack-camels would take from three to four days. The old man declared that the Torguts now living on the south shore had never visited the north shore, for the simple reason that they had no business there.

He also spoke of three dry river-beds that flowed into the lake to the west of the Oboin-gol: the Keretin-gol (Raven River), the Mören-gol (Broad River) and the Shara-tora- or Shara-toroiin-gol (Yellow Poplar River). In March, large parts of what was now dry land to the east of the lake were flooded over. The lake was everywhere equally difficult of approach, owing to the marshy ground. During the winter months, however, it was easy to reach. The old man declared

Fig. 15. Camp on the Oboin-gol, October 25th

that one would die if one drank water from Ghashun-nor! Just westwards of the lake there are two great routes to the north, one from Suchow to Uliasutai, the other from Suchow to Urga. Between Suchow and Ulan-tsonch on the Mören-gol the routes are identical, but from this point they separate and go different ways.

In winter there is generally a hand's breadth of snow in the lake-tract. Ghashun-nor freezes every year, but the old man did not know how thick the ice was. The rivers are solidly frozen over, but there is always running water under the ice. In spring-time, especially in March, there are storms; but stormy weather is not unknown in winter either. He knew that the winter at Ghashun-nor was considerably milder than in the republic of Mongolia.

There are sometimes hard north-west gales, that drive the lake-water in a south-easterly direction, flooding large portions of the lowest delta. He thought our camping-place a very risky site, as we might be surrounded with water on all sides. He himself intended to shift his yurt farther south, and was therefore in a hurry to get home.

RETURN FROM GHASHUN-NOR TO TSONDOL

On October 26th we broke up our camp at Ghashun-nor and set out on the return journey to Tsondol. At first we followed the eastern bank of the Oboin-gol. We took short-cuts at the bends, passed a large wooden obo, entered a wood and rode past a fold for ewes and she-camels made of dry branches. We picked our way between dense tamarisk thickets and passed to the west of the residence of the Torgut prince.

For the first time we saw narrow strips of ice near the banks of the river. We proceeded through woods, sometimes consisting of nothing but dead trees, among bushes and over open and grassy plains. Near some of the Torgut yurts browsed not only camels and horses but also donkeys. Open stretches of black gravel we traversed, too, though this was generally at some distance from the river.

We waded over the Oboin-gol, presently catching sight of the great dune at the main camp, and soon we had joined the members who had stayed behind.

Especially was I glad to meet Norin, Bergman, Heyder, Massenbach, Söderbom and Ting, whom I had not seen for months, and who had happily arrived in camp on October 23rd.

All these members of the northern column were, and with justice, pleased with their results. They had lost only one camel and bought three more. Twelve of their camels were in such good condition that they could begin the long journey to Hami at a moment's notice.

They had also heard wonderful rumours about the main caravan. Some were to the effect that we were a whole army on the march to the Edsen-gol to undertake the conquest of the Torgut country. Others related that we had entrenched ourselves in Khara-khoto, where we had found huge quantities of gold, and that large bands of robbers had assembled outside the walls to plunder us when we should depart.

Winter was now noticeably on the way. The whole staff now appeared in big felt boots, sewn from Mongol felt, in fur caps and warm clothes. And every evening each member took a basin of glowing embers to his tent when he retired for the night.

We began to wonder where Yuan had got to. He and the whole of the south column with him had disappeared completely. Evidently he had chosen a considerably more southerly route than had been originally intended.

From caravan leaders and Mongols who knew the country we heard that six routes reached the Edsen-gol region from the east: 1) the northernmost, cutting off a strip of Outer Mongolia to the north of Ghashun-nor; 2) a route which passed the Edsen-gol delta near the house of the prince; 3) the road we had taken with the main caravan; 4) a route which reached the river fifteen li to the south of our camp; 5) the road from Chen-fan to Mao-mu; and 6) the great postal route between Kansu and Sinkiang. Besides these there were several local roads in Alakshan, and it was impossible for us to know which of these Yuan might have chosen.

A FIRST PARTY LEAVES FOR HAMI

Dr Haude suggested setting out for Hami with a part of the caravan on October 31st, in order to reach this town by the shortest possible desert route so that he might organize there our meteorological station number 2. He ought thus to arrive about three weeks before the main body. His caravan would be the middle column, for I intended to take a more southerly route and Norin-Bergman a more northerly one. Haslund was to be Haude's caravan leader and Hempel was to map the route.

Accordingly, on October 31st they set out with a lightly equipped caravan of twenty-four camels. Besides those mentioned above, **Dettmann**, **Kaull** and **Li** also took part. Only one Mongol and one Chinese were taken with the party as camel-men.

SINKING OF THE EDSEN-GOL

During the last days in October and the first part of November the river dwindled appreciably. True, a part of its water was bound in the form of ice; but the ice-formation was not sufficient to explain a fall of 33.5 cm. from our maximum. The Torguts said that the farmers round about Mao-mu and higher up put their fields under water every year, to get a covering of ice as a protection during the winter. When this operation was over, they said, we could expect a fresh high-water level in the river in the middle of November. The bed looked strange and unfamiliar. The main arm that had washed our bank had now changed into a long bay full of stagnant water. The stream that was left flowed in the middle of the bed and appeared only as a thin streak, winding its way over innumerable mud-banks.

MY WINTER DWELLING

One day **Larson** suprised me with a yurt, that he had ordered from a Torgut. It was small, but quite new, and beautifully clean. The yurt felts were white on the outside and grey on the inside. The door was painted red. In the centre stood a stove that one of our Mongols had manufactured from an empty paraffin-oil tin. It was provided with a home-made stove-pipe that went out through the smoke-hole in the top of the yurt. This latter also gave me daylight.

It was with a feeling of deep satisfaction that I moved into this warm dwelling just as winter was beginning to show its teeth.

SÖDERBOM's WINTER DWELLING

Another dwelling that was finished at the same time as my yurt, and that immediately became very popular, was the combination of tent and cave in which **Söderbom** was to spend the winter. In a poplar grove that was to take the sting out of the north-westerly storms he had dug a square hole, one meter in depth; and over this he had set up his big white tent. In order to enter his salon it was therefore necessary to go down some steps. Farthest from the entrance to his tent-hut he had left a platform of earth to serve as a sleeping-place, like a Chinese k'ang. In the centre blazed an open fire.

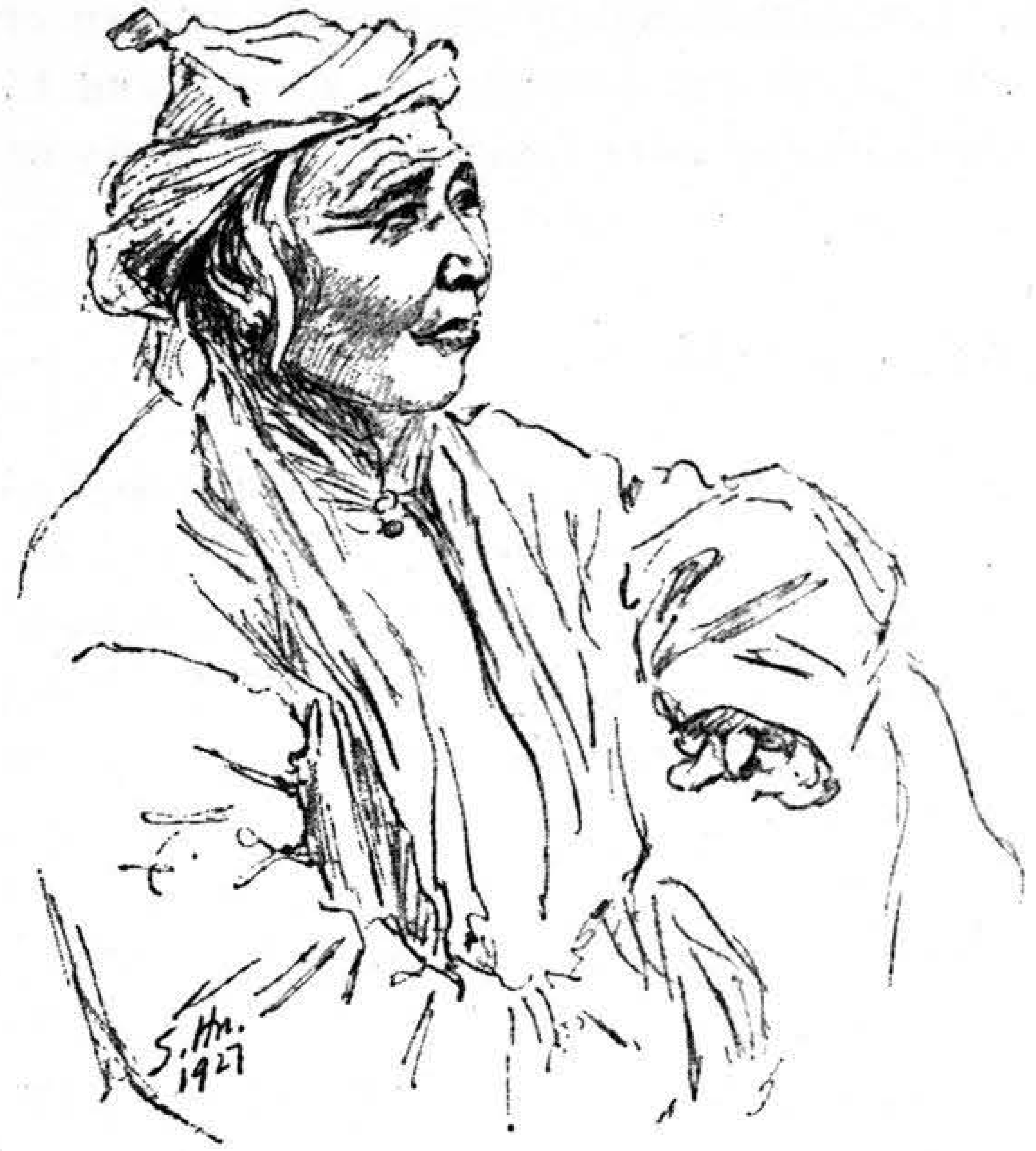


Fig. 16. Manega, the old Mongol lady at Tsondol

MARSCHALL's RETURN

Early in the afternoon of November 3rd MARSCHALL made his appearance. Quiet and imperturbable as usual he came leading his riding-camel and asked in pure Swedish: »Can I get something to eat?» His request was immediately complied with, while a storm of questions showered down on him.

The distance to Mao-mu was 223 kilometers. He and the two students had taken nine days on the journey there and eight days for the return journey. They had lost one of their six camels. After 130 kilometers the wood had come to an end, and the last twenty-five kilometers had taken them through settlements, gardens and fields along the banks of the river. The little town of Mao-mu lies near the right bank of the Edsen-gol and is surrounded by a square wall with a side of about 200 meters and provided with gates to the west and the south. Here live a bare three hundred Chinese, and there are only three shops. There are about a thousand families in the entire district.

Our emissaries had been extremely well received by the jovial burgomaster, in whose hospitable house they had stayed. He lived with Spartan simplicity, as became one of FENG YÜ-HSIANG's men.

Flour, sugar, vegetables, potatoes, sheepskin coats and other things we were in need of they had bought from a Chinese merchant, who also agreed at a cheap rate to hire out ten camels for the transport to Tsondol.

REPLY FROM PEKING

In reply to all the requests and applications that SIU and I had addressed to our Committee in Peking the latter had now, in their letter of August 6th, answered 'yes'. I had asked that a Swedish philologist and an astronomer, who were not included in the contract of April 26th, might be allowed to join the expedition and meet us in Urumchi.

My request to be permitted to establish five permanent meteorological stations instead of the four mentioned in the contract was likewise granted. Accordingly, the station that had been agreed upon for Charchan was to be divided into two, one at Charkhliq and the other on the Khotan-darya.

NEIGHBOURS AND VISITORS

Our nearest neighbours were a Mongol family whose members had their yurts just to the south of our main camp. Every day the mistress of the yurt, a nice little old woman with fine features and bearing the name MANEGA, came with a pail of milk for *noyan*, that it to say, myself.

Other Mongols, both from the surrounding district and further afield, frequently paid us visits. A red beggar-lama of north Mongolian race told us that he had settled down in our wood to rest for a while. Once, he said, bound together with another lama, he had journeyed from Urga to Tibet, but without having the strength to complete his pilgrimage. He had been in Kobdo, Uliasutai and Kulja.

Near the Oboin-gol about forty-five li to the south of the prince's residence, lived the TANGUT GEGEN or the Tibetan Incarnation. He had spent forty-eight years on the Edsen-gol. He had a big yurt, partly furnished as a temple. Every day he left his tent at special hours of prayer to blow hollow tones in his conch shell horn. Why, among all Asia's hidden corners, he should have pitched upon just the Edsen-gol delta as his place of residence was a mystery.[1]

VISIT FROM A RUSSIAN COUPLE

An unexpected guest was the Russian SEMUKOV, who had been travelling in the region to the north-west of Ghashun-nor to collect local fauna for the museum in Urga. He had heard that we were encamped with our caravan at Tsondol and could not resist the temptation of a visit. He was now tenting with his young wife and a Mongol a little farther down the river. I invited the two of them to lunch.

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[1] In the book »A Desert Journal» (in Swedish »Ökenbrev») by the three English missionaries in Suchow, EVANGELINE and FRANCESCA FRENCH and MILDRED CABLE, there is a passage about this TANGUT GEGEN, relating how on a visit to the Edsen-gol he was captivated by a young woman whom he took to wife. On account of his marriage he was expelled from the monastic order to which he belonged in Tibet, but he remained on the Edsen-gol and there became a holy man. F. B.

These two Russians were extremely likable, and they came like a greeting from the outer world. He spoke fluent German, but she knew only Russian and a little Mongolian. In their blue Mongolian sheepskin coats with belts and their fur caps they made a striking picture in our camp. But she was shy at the sudden transition from the depths of the desert to the company of a lot of white men.

NORIN, who was to lead the northern column to Hami, questioned SEMUKOV about the route he intended to take, for the Russian couple had just covered a part of it themselves.

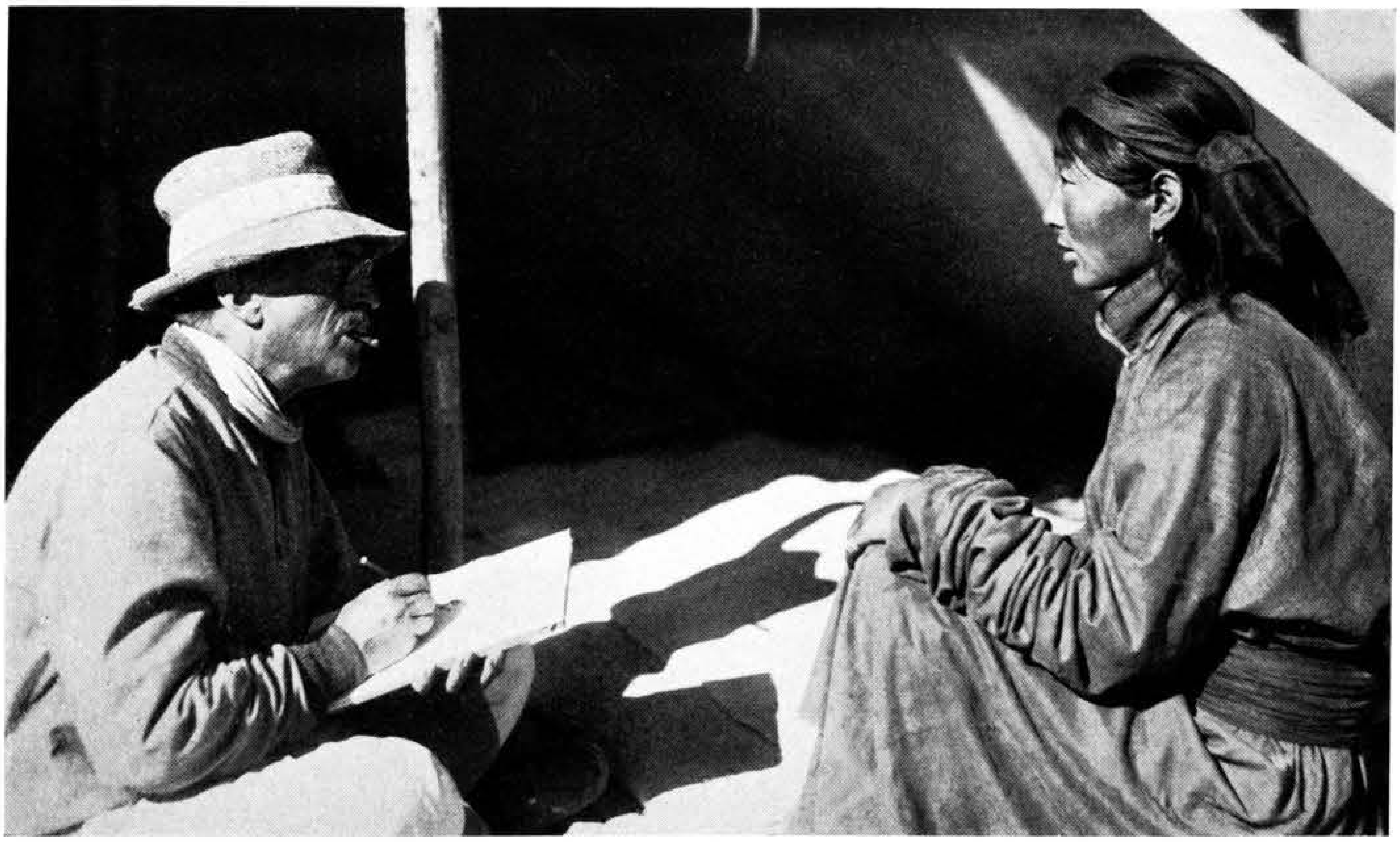
Everybody wrote letters home, for SEMUKOV was about to journey direct to Urga, where he would arrive on December 1st, and he had promised to take our mail. A packet of fifteen letters was handed over to him.

THE TORGUTS

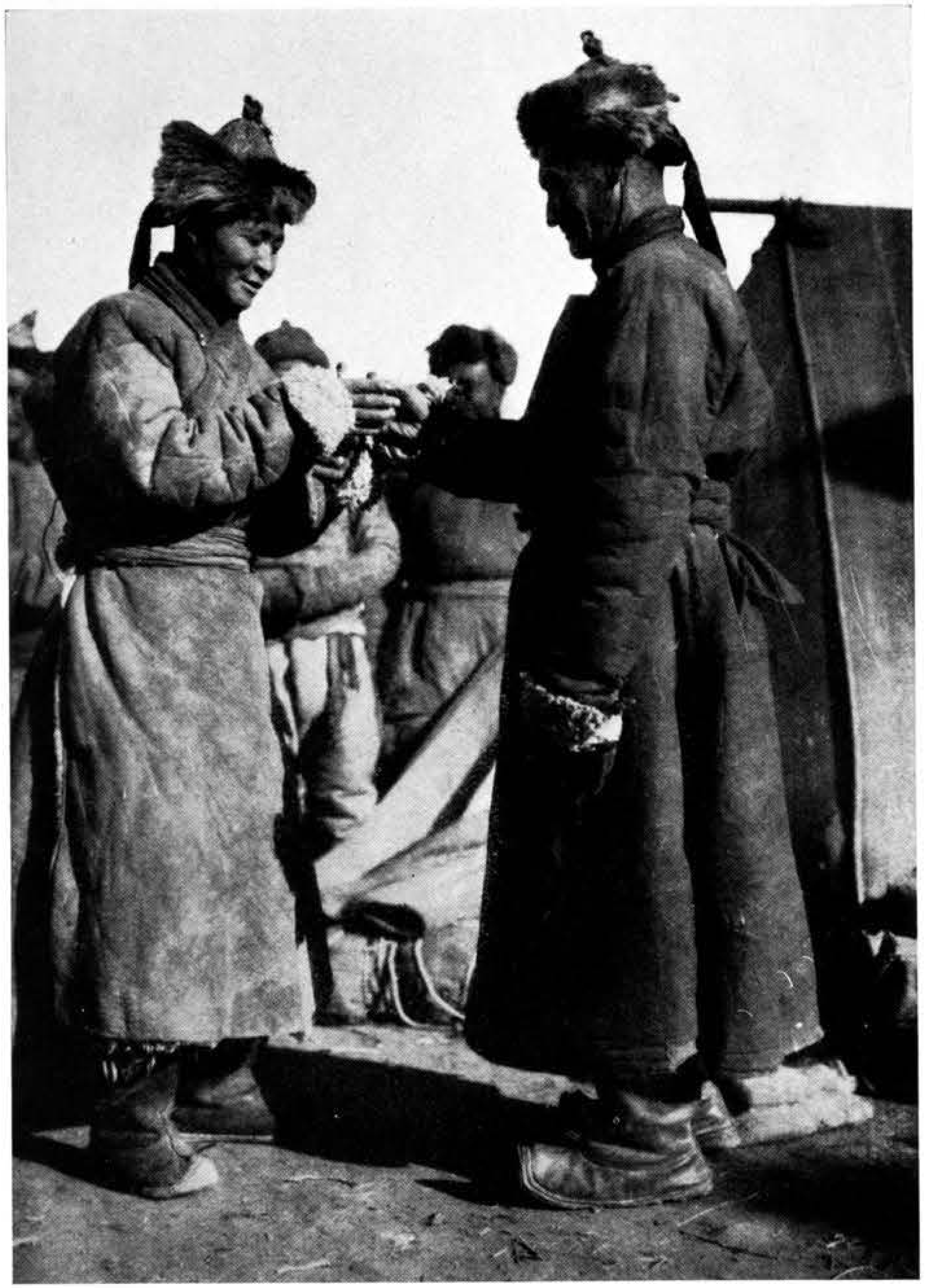
The Mongols in the Edsen-gol country are of Torgut extraction. In the 1860's was published a book under the title »Meng-ku Yu-mu-chih» or »Cattle-breeding and Pasture-lands Among the Mongols». The author, CHANG MU, was not able to finish his work. It was completed by HO CH'UI-T'AO. A special volume is devoted to each Mongol tribe. SIU was kind enough to translate for me the principal contents of the little volume on the Torguts. I recognized much of what I had already read in the works of famous sinologues in various European languages.

The progenitor of the Torguts bore the name WUNG KHAN. He was followed by seven generations leading up to BÖGÖ URLUK, who had four sons, the eldest being called JOLE TSAGHAN URLUK. The latter's son HU URLUK (BORO ÖRLEK) lived in the country of Eishörn-ola, a part of Yar, not far from Tarbagatai. At that time Ölöt comprised the following four sub-tribes: Tsoros (the Dzungars), Torgut, Hoshot and Durbet. Hoshot was the only branch that was descended from CHINGGHIS KHAN. Tsoros lived in Ili, Durbet near Irtish, Torgut in Yar and Hoshot, who had formerly lived in the vicinity of Urumchi, left this tract at the end of the Ming dynasty to conquer, under their chief GUSHI KHAN (KUSHE KHAN), a part of Alakshan, the Kuku-nor district and Tibet. GUSHI KHAN's nephew OCHIRTU KHAN moved his tribe to the pasture-lands of Alakshan. But in 1677 OCHIRTU KHAN was attacked by the Dzungars and killed. After this a number of his kindred moved to the tract around Ning-hsia and were allotted pasture-lands by the emperor. GUSHI KHAN's younger son had sixteen sons. Of these, four had with the permission and aid of the DALAI LAMA settled at Kuku-nor while twelve settled in Alakshan. They received the imperial consent to live in the regions they had chosen, which lay sixty li from the Chinese frontier.

Professor Siu Ping-ch'ang *Lieberenz Photo*



The author drawing a portrait of a Mongol woman *Lieberenz Photo*



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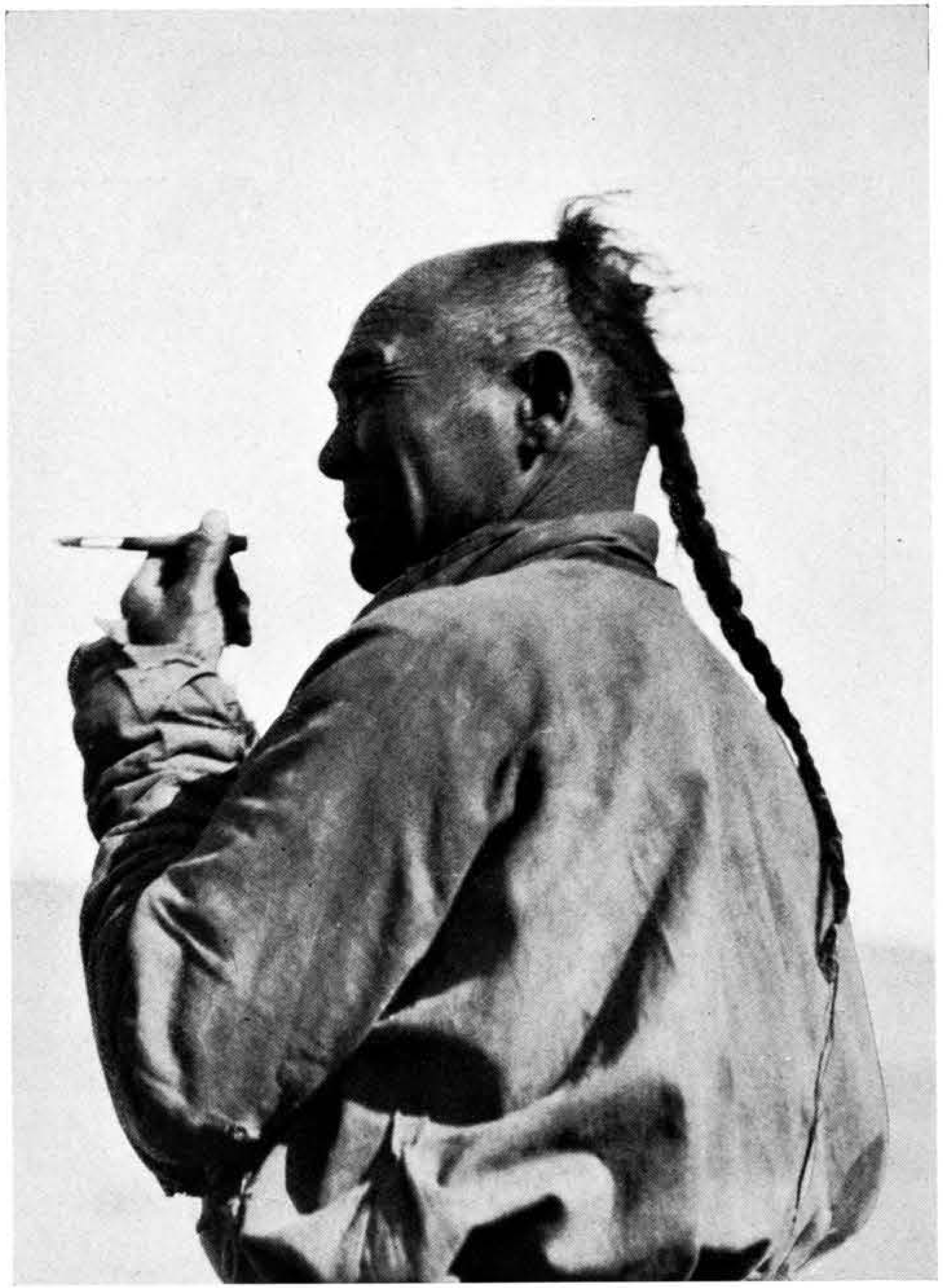
A Mongol greeting — exchange of snuff-bottles between Mate Lama and Tserchi



Lieberenz Photo

A free-born Mongol from Mu-mingghan — pride and power in repose

At this period there were always four sub-divisions of the Ölöt tribe. When the Dzungar chief BATOR HUNG-TAIJI had achieved greater power than any of the other tribes, HU URLUK, the chief of the Torguts, who hated him, determined to betake himself with the whole of his tribe to the south of Russia. This took place in 1618, and towards the end of the Ming dynasty, or more precisely 1643, they settled down in the region of present Astrakhan. Their head-quarters is described in the Chinese annals as being 40° N latitude and 53° W from Peking. To the south of their new settlement the Kosacks had one of their favourite resorts. Finally, the Torguts became Russian subjects.

HU URLUK's sons, however, sent ambassadors and gifts every year to the Emperor of China. HU URLUK's son SHUKER TAIJI (SHAKUR?) had a son PUNTSUK (PANSUK), whose son AYUKA (AICHI) assumed the title of Khan. In the fifty-first year of the reign of K'ANG HSI (1712) AYUKA sent a messenger to the emperor. The latter showed interest in this distant people and in order to get trustworthy information about their country he sent TU LI-CHEN through Russian territory to the Torguts' district. TU LI-CHEN has described his three years' journey in a work called I-yü-lu or »The Book on Foreign Countries».[1]

In the middle of the eighteenth century the Torguts were a large tribe under their chief OBISH KHAN (also written UBASHI, UBASHA and OSIBA). At that time the Russians were at war with their neighbours, and as the Torguts were their subjects they were also obliged to serve in the field. When as a consequence of the Russian wars OBISH KHAN had lost many of his people he wearied of living under the Tsar's sceptre and decided to seek new pastures. One of his relations, who was resident in China, visited his head-quarters and advised him to undertake the conquest of Ili, which district had been taken by China in 1758.

OBISH KHAN wished to have the whole Torgut tribe with him and sent a fiery cross to those who lived to the west of the river (Volga), with word that they should begin to march in the winter, when it would be possible to cross the river on the ice. But just that winter (1771), as it happened, the river did not freeze over, and he therefore set off with only 160,000 men for Ili. The Russians pursued OBISH KHAN and his following, but the latter had a fair start and made good their escape. When the Qazaq began to harass him he resolved to take another route, and turned towards the Buruts,[2] living to the west of Sinkiang and north-west of Kashgar. The Buruts, however, also attacked the migrating tribe, plundering

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[1] This book, which exists in English translation, is of particular interest for us Swedes, for the author met captive officers from CHARLES XII's army in Siberia. Descriptions of the embassy exist also by some of these soldiers of King CHARLES XII. One of them, J. S. SCHNITSCHER, was an officer in the escort to TU LI-CHEN. He related the story of this visit at AYUKA KHAN's court in a little book that was published in Stockholm in the year 1744 under the title of *Berättelse om Ajuckinska Calmuckiet*. F. B.

[2] Burut = Qara-Kirghiz. F. B.

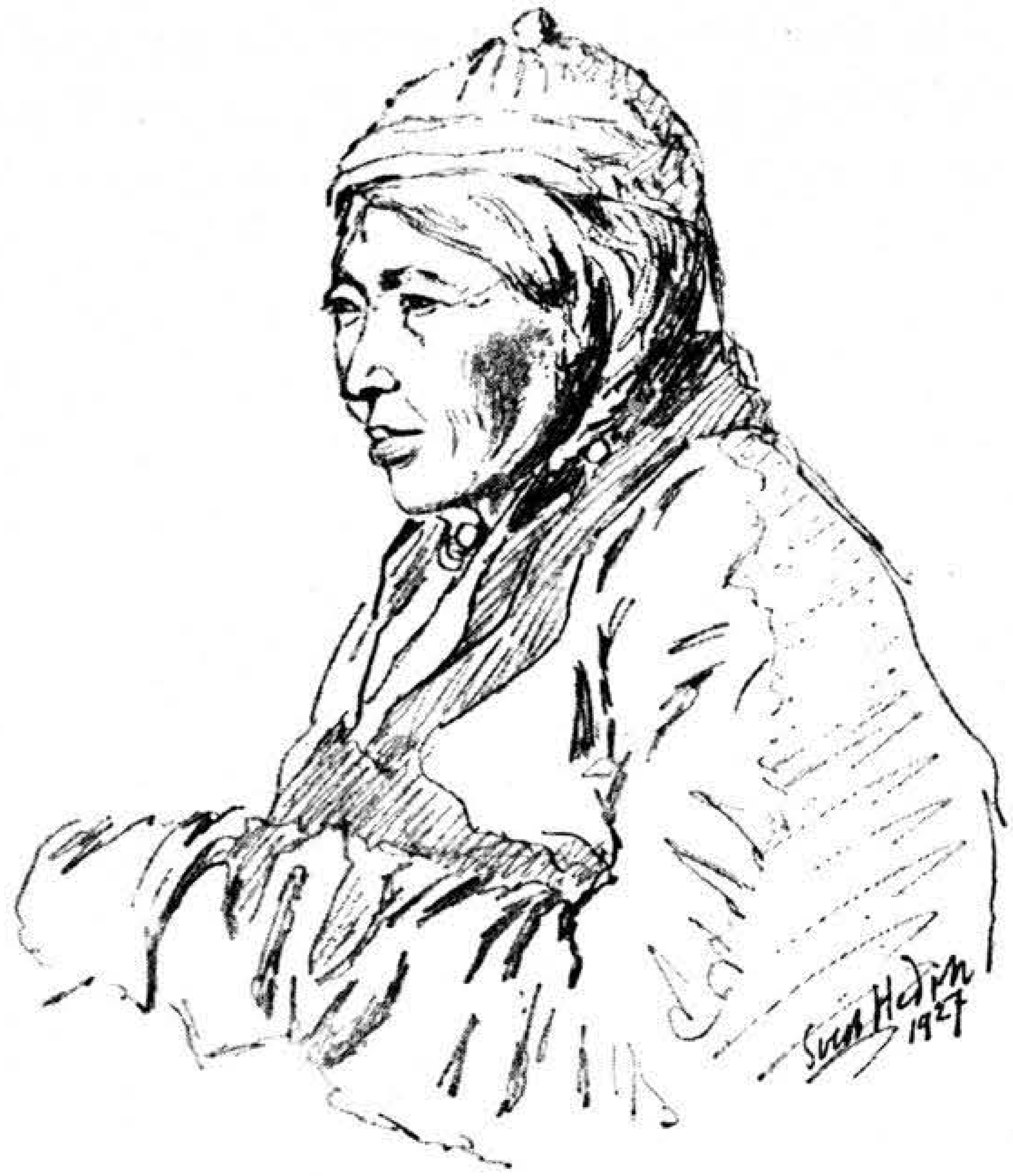

Fig. 17. Torgut woman, 52 years old, the wife of Targhan Tserchi

the tents and baggage-carts, and OBISH KHAN sought salvation in the desert. Here, during a ten days' journey, they found neither pasture nor water, and were obliged to drink the blood of their horses and oxen. More than half the tribe perished and all their pack-animals were lost.

After seven months on the march they reached the frontier of Ili. OBISH KHAN had 70,000 of his original company left. When General SHU HO-TEH, the Governor of Ili, heard of the arrival of the Torguts he sent troops to defend the frontier and messengers to demand their business. OBISH KHAN replied that he was the more willing to submit as he was himself a lamaist and longed for a lamaistic country. He was tired of living under Russian rule, where the religion, customs and attire were so different from those of his own people.

Chinese opinion was divided. Some thought the Torguts should be well-received, others that they ought to be driven out of the country. The Emperor CH'IEN LUNG resolved to receive them with hospitality, and summoned their leader to Jehol. There he was given the title »khan», and his brother was made a prince, while the other Torgut chiefs were given lesser ranks.

The tribe was allotted new pasture-lands, comprising four different districts. The southern district was situated to the north of Qara-shahr, the northern one to the east of Tarbagatai, the eastern one between Ili and Urumchi, while that to the west was situated eastwards of Kulja. On the map »Innerasien» in STIELER's »Handatlas» one finds the word Torgut at these places to this day.

In addition, the emperor gave them 140,000 horses, oxen and sheep over and above the 120,000 they had already received in Sinkiang. Further, they were given 20,000 chin of tea as well as grain, cotton, cloths, yurts etc. to a value of 200,000 taels.

The precious imperial seals they had received under the Ming dynasty were returned to the emperor, who in exchange gave them Manchu seals.

Finally, the Chinese annals relate how destiny led a branch of the Torgut tribe to the Edsen-gol, giving the genealogy with Old Testament-like thoroughness and dryness from generation to generation right down to the chief who was the first at this river. Thus, we are told that Hu Urluk's son Shuker Taiji had several sons, and that the fourth of them, Namu Jelung, had a son Nachar Mamot, who was thus a cousin of the previously mentioned Ayuka. In the year 1704 Nachar Mamot's son Arabjur betook himself through the Dzungar territory on his way to Tibet to visit and speak with the Dalai Lama, whom he evidently wished to beg for aid. The Dzungar chief Tsevang Rapdan was at that time on a hostile footing with Ayuka, so that Arabjur could not return in security, and he therefore took his way to the Suchow district in Kansu. From here he sent a messenger to the emperor, declaring his willingness to enter the service of the Son of Heaven. The emperor gave him the district of Syrtun (Sirtun), a lake and the surrounding country, situated to the south-west of Suchow.

In the year 1716 Arabjur offered to enlist in the emperor's army. As it was always a part of the policy of the Manchu emperors to bind the Mongols to China with the strongest possible bands, Arabjur's request was granted. The emperor then commissioned him with five hundred men from his tribe to undertake an expedition to the west to look for the lake Gas, situated two hundred li from Lop-nor. (In point of fact, Gas — or Ghash — lies a good 400 li to the south-east of Lop-nor.)

Arabjur stayed on the shores of this lake with his tribe and died there. From the emperor he had received the title Kuhan Beise. His son and successor Danchung went in person to Peking to offer his duty to the emperor, and received on that occasion the title of Dola Beile.

In 1731 a spirit of discontent seems to have been rife among the Torguts at Lake Gas. Several chiefs went over with their troops to the Dzungars, and Danchung no longer felt himself secure against these neighbours. He wished to exchange his old pastures for new. He therefore addressed himself to the governor of Kansu and Shensi, Chia Lang-a, who allotted to him and his Torguts certain districts in the Nan-shan. These were called Alak, Altai and Taibushi, and thither migrated this tough and wandering tribe, that seemed unable to find any spot on earth to call permanently their own.

Nor did they stay for long in the Nan-shan, for the emperor soon allotted to them the country around the lower reaches of the Edsen-gol right down to the terminal lakes to settle in. In the year 1729, then, DANCHUNG Dola Beile was the first Torgut chief at the Edsen-gol. At the time of our visit to the Torguts they had lived near the river and the lakes for not quite two hundred years.

In the old days all the Mongols on Chinese territory were personal subjects of the emperor. With the introduction of the republic in 1911 this relationship lapsed automatically. The Torguts at the Edsen-gol, who now reckoned ninety-seven families, came under the authority of the governor of Kansu, though the prince could in certain matters address himself direct to the government in Peking.1)

The district of the Edsen-gol Torguts extends in the east to Gurnai, in the south to the boundary of Mao-mu and to Holi-shan, in the west the boundary loses itself in the desert, while in the north the mountain Atsi-shan constitutes the boundary.

The above account has treated only of the old Torguts, whose descendants in our days are to be found on the banks of the Edsen-gol and in the previously mentioned parts of Sinkiang. The new Torguts live to the south and south-west of Kobdo.

OUR FIRST METEOROLOGICAL STATION

During the whole of the period we spent at Tsondol work was going on daily towards the establishment of the first permanent meteorological station, which was to be staffed by ZIMMERMANN, SÖDERBOM and MA.

With a warm hand I gave ZIMMERMANN three very valuable and useful things: my faithful fellow-traveller and pet Hami, from whom I should never have consented to separate if a sprained front paw had not made it impossible for him to follow us on our westward journey; a first-class camera with a considerable number of plates; and the mess-tent, that had been a source of common pleasure during the journey from Pao-t'ou.

For the time being ZIMMERMANN was to live in this spacious tent. To the south of the tent a well had been dug, 2½ meters in depth, with sixty centimeters of water. The meteorological observatory was surrounded by a square fence with a side of twenty meters. The setting up of the meteorological cage with instruments was more or less the same as at Khujirtu-gol, but it was protected this time by an extra roof of bast mats in the shape of a pyramid and reminiscent of an African negro hut. An eight meter high mast bore the weather-cock, and on the river-bank stood a water-gauge. From a little jetty one could read the temperature of the water.

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[1] After the division of Kansu into several provinces the Edsen-gol region was included in the province of Ning-hsia. F. B.

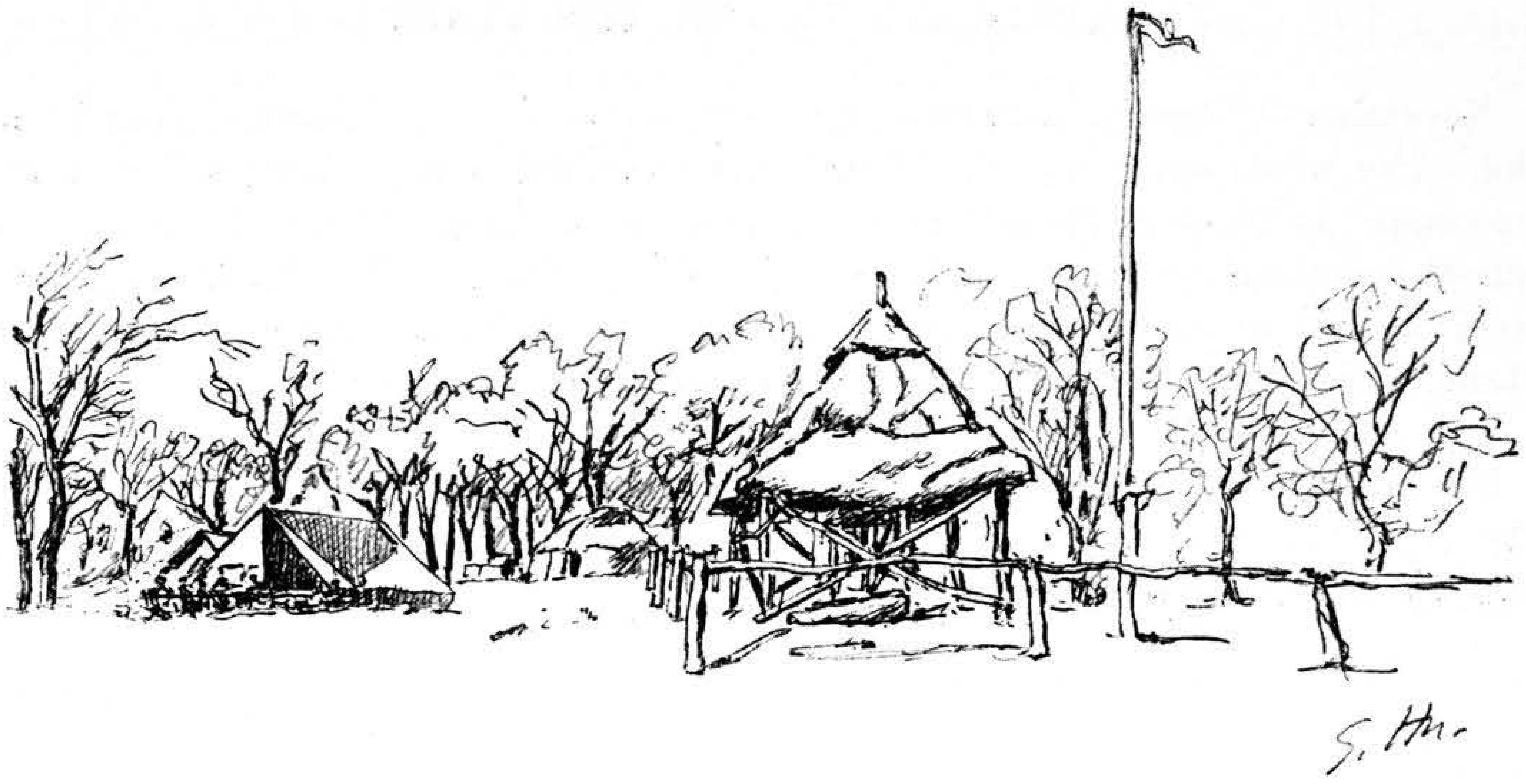

Fig. 18. The meteorological station at Tsondol

According to the meteorological schedule about twenty readings were made three times a day (at 7, 14 and 21 o'clock). From seven till twenty-one, moreover, the most important observations were made every hour, some even once every quarter of an hour. The hypsometer, on the other hand, was used only every third day.

Four Mongol yurts were to be erected at the edge of the wood, one for Zimmermann, one for Ma, one for the Chinese servants and one for Merin and the other Mongol camel-men.

As our finances were very low we could not leave more than some few hundred dollars behind for the needs of the station, in addition to a smaller sum for Yuan's account when he should arrive. It was resolved that Haslund, who was a brilliant caravan-leader, should ride back over the seven hundred kilometers to the Edsen-gol immediately after my arrival in Hami, taking money and mail to Station I.

The three who were to serve at the station during, as we planned, a whole year, would sometimes find time hanging very heavy on their hands. Though the one who happened to be looking after the instruments would have enough occupation and to spare, and the little »community» would always find a thousand and one things that had to be done. The countryside, moreover, was the most idyllic we had seen in Mongolia, with park-like woods flanking the broad river. In a following volume a special section is devoted to the strange adventures of the staff of the Edsen-gol station.

November 8th had been decided upon as the date for our departure from Tsondol. The whole camp was therefore busily occupied with packing and winding up camp. In the very thick of these activities some Torguts came on a visit. We questioned them about the southern caravan-route through The Black Gobi. We were advised to be on our guard against robbers at a place between Anhsi and Hami, where a band of at least a hundred men had their haunt.

November 7th was another farewell day, for on this date the student TS'UI left the expedition and set off on the return journey to Pao-t'ou with eight camels, two Chinese and two Mongols.

VIII. FROM THE EDSEN-GOL TO HAMI

DEPARTURE FROM TSONDOL

On November 8th we were to begin the second great stage of our journey, the hard winter-march through the terrible part of the Gobi Desert that separates the Edsen-gol from Sinkiang. The first day's march was to be quite short, being really regarded in the light of a trial-march to give the Mongols an opportunity of seeing that the loads were evenly distributed on the camels' backs. We therefore intended to set off after lunch, and in this way we had a last opportunity of gathering at the long table under the poplars. Then the work of loading began.

In the midst of all this bustle a messenger arrived to say that the Torgut prince would be coming within a few minutes to bid us farewell. We arranged a tea-table with chairs on ZIMMERMANN's tent-veranda. Professor SIU and I went to meet our visitor and LARSON served as interpreter. The chief handed to the professor and myself a *khadak* each of unusually large dimensions and a bag of rice, explaining that the former were a symbol of his father's and his own good wishes for a happy journey to Hami, and the latter an expression of his hope that we should lack for nothing on the journey. We spoke once more of compensation for the damage to his pastures that would be done by the camels we should be leaving behind; but he bade me be easy on that score and expressed his hope that I should return to the Edsen-gol before the station was withdrawn.

THE HAMI CARAVAN

My Hami caravan reckoned 127 camels. Sixty-four were left behind at the station and eighty-one were out in the field with the various sub-expeditions. On the way from the Khujirtu-gol we had lost twenty-eight animals.

NORIN, BERGMAN and MARSCHALL remained in camp for another day, and the following day they were to set out on a more northerly route than we. The journey to Hami was to be made, like the first stage, by three columns.

The following members of the expedition's staff were to comprise the first co-

Fig. 19. The southernmost tent in the camp at Tsondol

lumn: LARSON, HUMMEL, HEYDER, MASSENBACH, LIEBERENZ, MÜHLENWEG, SIU PING-CH'ANG, HUANG, TING, LIU and myself. The camels in my column were to be managed by nineteen Mongols and Chinese. We also had with us a cook, five boys and the digger CHUANG. The caravan thus comprised in all thirty-seven men. The provisions were calculated to last for forty days.

LARSON was convinced that all the camels would reach Hami. None of us then had any idea how hard and trying this desert journey would be.

THE FIRST STAGE

Leaving the Tsondol camp and its happy memories behind, we first set our course up the river, afterwards turning south-west. After a short march we pitched camp on a sterile gravel-patch near the skirt of the poplar wood. This was camp no. 50.

On the same day a Chinese merchant-caravan left the Edsen-gol with eight hundred camels. This caravan came from Kuei-hua and was on its way to Guchen with cloths, tea, groceries, cigarettes etc. During the first part of the journey we had them a short distance ahead of us and met them several times. Their leader had asked permission to travel in our company, as our rifles would have served to protect them as well as ourselves from robbers. We did not, however, accept this proposal, as we knew that several wells had not enough water for so many camels.

On November 9th the Edsen-gol woods disappeared behind us; we crossed a row of low ruins of watch-towers which BERGMAN subsequently found to be of the Han dynasty and proceeded over hard, even ground covered with black gravel. Only a few odd clumps grew here. A dry little river-bed with languishing poplars was evidently Narin-köl. The route took us past a belt of bound dunes and some tortured poplars. Soon afterwards, arriving at a row of dunes, we pitched camp and our hunters went out after game. My yurt was set up in seventeen minutes and my plan of work, which afterwards recurred daily, included the making of a couple of sketches, calculation of the length and direction of the day's march, an entry in my journal, the writing of articles for the press and a short period devoted to the study of the Mongolian language.

Our big iron stove was left behind at Tsondol, so all our cooking was done on an open fire. Instead of bread we ate Swedish rusks, of which one of our cooks had baked a huge supply. Everyone got seven such rusks a day. Chocolate was also rationed; but we had no other food restrictions.

THE MÖREN-GOL

On November 10th we crossed the bed of the Mören-gol, 180 meters in breadth. It was moist in a couple of places, but otherwise quite dry. On the left bank was a well near which was a pool with fresh, ice-covered water. The wood flanking the river-bed was sparser than at Tsondol, and white beam-trees were here the most representative growth.

Just near our camp was a Torgut yurt, and we heard that twenty families lived on the bank of this river. A Torgut by the name of JANTSANG was enlisted as a guide to the next well. This tract was called Toroi-börek.[1] Our Torgut informed us that wolves, foxes, wild-cats and antelope are to be found in the tiny woods of the Mören-gol, but no lynxes. He hunted these animals and sold the skins to Chinese merchants. For a wolf-skin he got as much as ten to twelve dollars. In the spring and early summer the river-bed is full of water; when the ice is melting it is impossible to cross. After continual summer rains there is generally high-water again. Finally, he told us that the HAUDE-HASLUND caravan from this place had taken the usual (southern) route to Hami, that we had intended to follow, and he advised us to take the northern road. We followed his advice — a step that from the geographical point of view proved to be a happy one, but that was disastrous for the caravan.

The route on November 11th led us straight to the north, crossing several other paths. It took us over steppes of small bushes and clumps, growing on little clay cones that were held together by their roots. Sand grouse were common, and antelope tracks led in every direction.

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[1] Roughly: The poplar-covered Dune. F. B.

After a march of 24.7 kilometers we pitched camp a good distance from the well Shara-khulusun. The site we had chosen for our camp among dry saxaules was called Dsakh-shara-khulusun or »The Boundary of the Yellow Reeds», which, of course, is no proper place name. Just at this point the wilderness was traversed by a road between Urga and Suchow. It was said never to have been used as a motor-car route, though one trial trip by car had been made, and it was provided with signposts in the form of wooden notice-boards on which two black hands had been painted. In these flat regions of hard, sterile ground one can drive a car in almost any direction, so that the road-builder's only task is to mark the route with signposts.

The part of Mongolia in whose eastern outskirts we now were might well be called »No Man's Land», — it is not subject to the authority of the Mongolian Republic, and there are no nomads — not, at least, on the stretch that we covered as far as Sinkiang; and the Chinese have not so much as a tiny trading station there. In several places, however, we found traces of abandoned poppy fields. Concerning the route we had now taken JANTSANG related that it had been in use for scarcely two years, and that the Chinese merchant caravans between Kuei-hua and Guchen used it to avoid the inland revenue stations higher up on the Edsen-gol. From our camp LIII we had the western end of Ghashun-nor due north and at a distance of forty li. The chain of mountains whose blue contour one saw to the north bore the name Tostu, and on one of its peaks the obo of the *dzasak* of the Balten province is erected. Here annual sacrifices are made to the patron spirits of the province. The lower mountain-chain to be seen in the north-west is called Unuktein-khara or »The Black Fox Mountain». Black foxes and crossed foxes are said to abound there. In the same mountain region the wild camel also has his native haunts, and it is from here that he sometimes extends his wanderings as far as to Ghashun-nor. In this particular year he had twice visited the lower reaches of the Mören-gol in herds of about ten individuals. JANTSANG and several others had seen the swift-footed and shy visitors before, like the wind, they had swung round to return over the desert whence they had come. The Torguts refrain from killing these wild camels for fear of provoking the wrath of the gods; only the Mongols of the republic hunt them from time to time.

Our old Torgut informant also spoke of the high mountain Tsaghan-bogdo or »The White God», situated at a distance of eight days' march to the north-west. The valleys were rich in vegetation and were also haunted with bears.

As we set off to the W. N. W. on November 12th, thus leaving Ghashun-nor behind us, we were met with a hard westerly wind, though the weather was otherwise clear. The temperature the previous night had been —9° C. The desert landscape consisted of coarse sand or fine gravel on a soft foundation. The route was often so smooth that it might have been macadamized. The undulations of the ground were imperceptible to the eye. One felt their indication, however, in the alterations of the camel's gait, and deduced them from the disappearance of the van of the caravan and its reappearance on the crown of another flat rise in the ground. Sketching such a landscape is a simple matter. One simply draws a line with a ruler. Above this line arches the turquoise-blue cupola of the sky; beneath it is the dark-grey, violet-shot desert — and the landscape is complete. There are absolutely no details to be added — with the possible exception of some small yellow-grey dots representing tussocks. That evening we pitched camp at a well.

DAYS OF STORM

By evening the west wind had freshened up to half a gale. It continued through the night, and at nine o'clock the next morning we had a fully fledged sandstorm over us. LARSON came running to my yurt, shouting: »Come out and have a look westwards! There's a sandstorm coming up like a black wall!» It was really a gripping, indeed, almost a horrible sight. The whole sky was darkened by myriads of flying grains of sand and dust.

A series of such stormy days are enough to knock out a caravan on the march. We therefore decided to stay on for a while at camp LIV, where at least we had water, though the pasture was wretched.

This storm was without doubt the hardest we had had; we estimated its strength at thirty second/meters. It was as if we were besieged, or frozen in. Against my tent pattered not only sand and dust, but also a veritable fusillade of fine gravel with a diameter of about a couple of millimeters came pelting against the stretched felts. On the windward side it seemed that the yurt was going to collapse, and one lath after the other came falling from the roof. However, I went on working as usual, writing away at my articles for the press. Neither, for that matter, were the occupants of LARSON's tent suffering from boredom; together with HUMMEL the latter was making despairing attempts to teach MÜHLENWEG and MASSENBACH bridge. Every now and then one heard peals of laughter through the roaring of the storm. The evening meal in LARSON's tent was thoroughly peppered with particles of dust.

The storm kept up the whole night of November 14th. Everybody stayed 'indoors', even the hardy Mongols.

It was as if a broom swept over the desolate ground. Light, whirling comet-tails of dust and sand went hurrying with the wind over the surface of the earth. Going among them, one had a feeling of insecurity — it seemed as if the whole ground were in movement. On going back to one's tent it was necessary to shield one's face, for millions of tiny projectiles were lashed smartingly against one's skin.

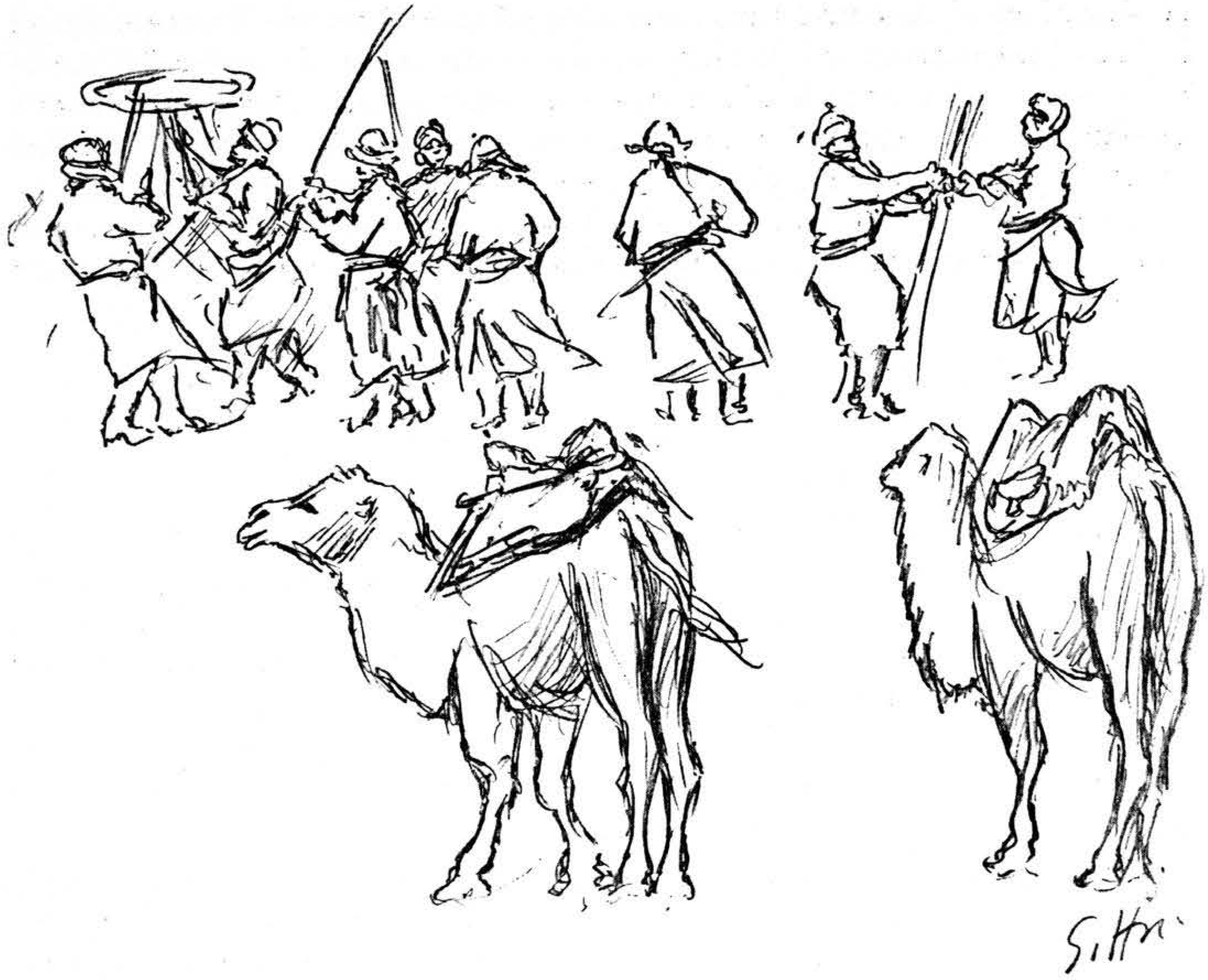

Fig. 20. Erecting my yurt

MEETING WITH NORIN's COLUMN

The next night the temperature sank to —7° C. The storm had somewhat abated, but the wind in the morning was still hard. On continuing to the N. N. W. we caught up a small caravan, whose fires we had seen at some distance from our storm-camp. To our surprise and satisfaction we found that it was Norin, who with Bergman and Marschall had by a more direct road thus cut across our caravan route. We arranged with them that they should accompany us for some marches, and that I should then take the more northerly route while they took their way through unknown country to the south thereof. In this way we could from two different directions map the mountain system that would separate us. The Mongols called this chain of mountains Kuku-tumurtin-ula or »The Blue Iron Mountain». We proceeded together, then, over hard ground, sometimes sparsely covered with thorny tussocks, but often completely sterile. Here and

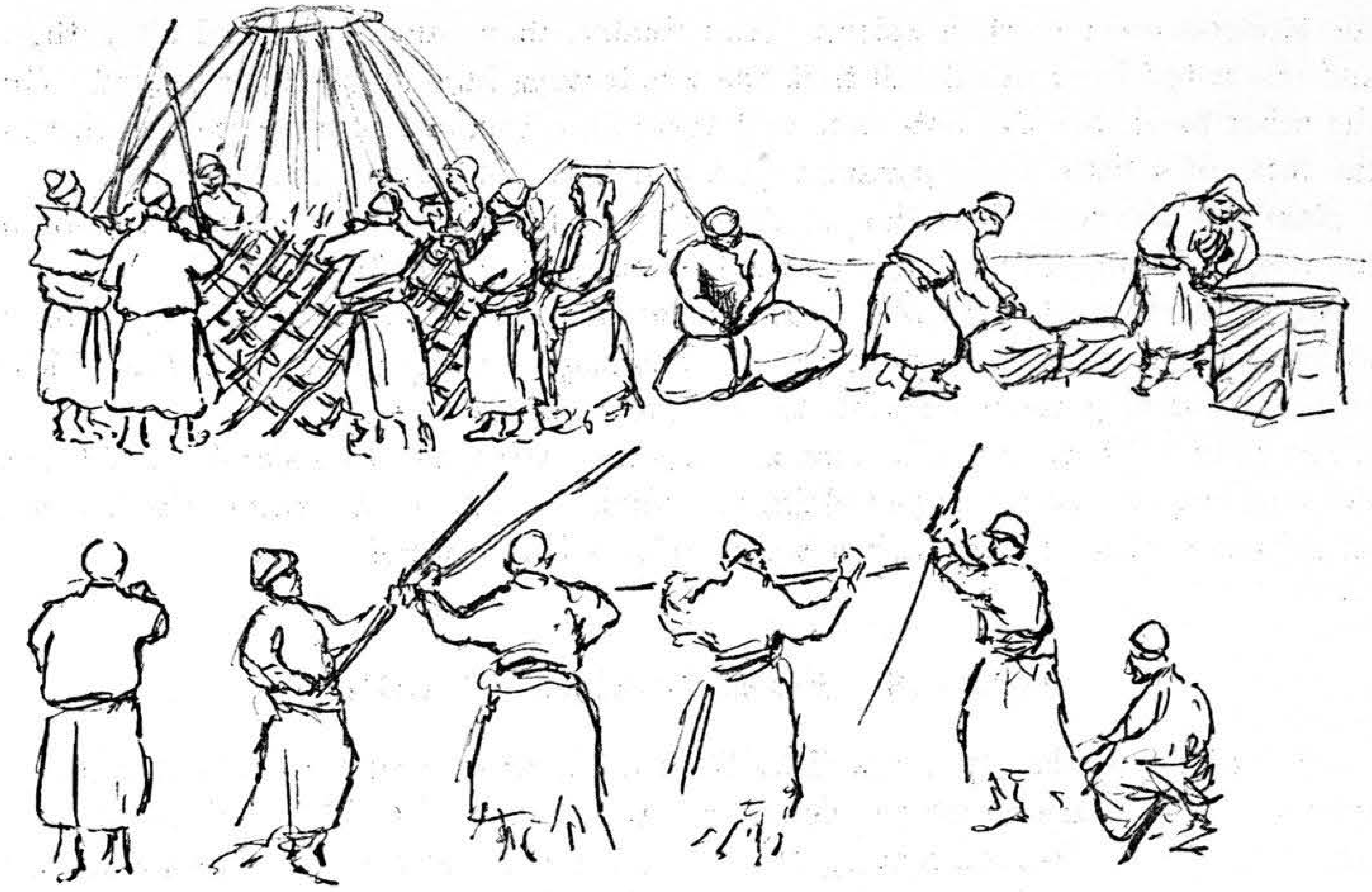

Fig. 21. Erecting my yurt

there one saw a clay terrace that indicated a larger extension of Ghashun-nor in ancient times. Disappearing behind us on our left was the Black Fox Mountain, whose western hills, by a mirage-effect, resembled dark necklaces hovering over the horizon.

After covering 30.6 kilometers in N. 8° W. we pitched camp in a terribly desolate tract. There was neither water, pasture nor fuel, but we had six tubfuls of the first-mentioned commodity.

On the morning of November 16th we were unable to wash, as all the water had to be saved for drinking. We missed, too, the basins of embers that were otherwise borne into the tents every evening and morning, for there was no fuel. No-one, however, was sorry not to be able to wash in a temperature of nearly —10° C.

The air was almost still when we continued due north over the desolate desert. The route looked like a bright band meandering over the dark-grey ground. The mounted Mongols chatted, sang, whistled and gossiped as they went. It is always a pleasure to have cheerful people around one. To the N. N. E. we saw the contours of the blue mountains that constituted a continuation of the Tostu.

Camel skeletons were few and far between. One got the impression that traffic in these parts was not particularly lively. Still rarer were the votive cairns that the Mongols erect to their spirits. And finally, they came to an end altogether, and one noted from this detail that one was leaving human dwellings behind. On the other hand, one did note here and there an occasional common route-cairn in the form of a little stone pyramid that had been set up by caravan-men.

Next day the route bore due north. We wondered why it did not swing off to the west. At this rate we were certainly getting no nearer to Hami.

An icy north-west wind blew shrewdly across our track. It is no easy matter to draw a map in such a wind; one's hands soon become numb, and it is a slow business warming them between taking the bearings.

The path led between hills, time and again crossing a dry erosion-bed. At last we came out again on the open plain, and pitched camp, after a rather short stage, on salt-encrusted ground with a water-hole called Sebestei.

PARTING FROM NORIN'S COLUMN

After bidding a hearty farewell to NORIN, BERGMAN and MARSCHALL, not forgetting also the little antelope Dicky, that we saw here for the last time, we continued to the north-west, leaving NORIN's column to set a course due west. We now had the mountains that formed a continuation of Tostu on our right, while to the left was the system to which the Black Fox Mountain belonged, and that we had traversed the previous day. The vegetation was, as usual, wretched, hard, dried up and stunted. To offer such pasture even to the patient camels would be inhuman, one might just as well make sawdust of our wooden boxes and give them that for fodder. However, on passing a belt of saxaules in sand-bound country we came upon a creeping, in part still green sort of bush that appealed to the camels, and here we pitched camp.

THE FIRST SNOWSTORM

On the morning of November 19th little white patches of snow lay in all the camel-tracks, in all the depressions and on the leeward side of every tussock or erosion-edge; and fine crystals of snow were driven through the air by the raging north-west wind.

The Siberian winter had come on a sudden visit. The wind was murderously cold; and if one went outside for a moment to have a look at the weather one soon hurried in again to put fresh fuel on the fire and to thaw out. Outside, the wind howled and roared with a will. The yurt creaked and groaned, and threatened to collapse on the windward side. As during the previous storm, it was anchored with heavy boxes. On my desk, as I worked, a miniature desert began to form, and a fine mizzle of dust and sand fell on my notes.

By midday it had stopped snowing, but the wind had increased to a hard gale. By two o'clock it had risen to a hurricane. Everybody stayed 'indoors'; one had the impression that the whole camp might be whisked away at any moment.

This was the first day the temperature had not risen above zero. During the last forty-eight hours the atmospheric pressure had sunk by nearly twenty-six mm., or from 656 to 630.5, although we had been at practically the same level the whole time.

At three o'clock the boys' tent was ripped into rags, fluttering and smacking in the wind. One heard the sound of tearing when the canvas gave way. The tent had to be abandoned; the boys were given HUMMEL's tent, and the doctor moved to LIEBERENZ's quarters. Professor SIU's *valet de chambre*, WANG, had to live with his master for the future.

When darkness had fallen the Mongols who had gone to Sebestei's well with two camels to fetch water returned. If the snow had remained on the ground we need not have feared any shortage of water, but it had been swept away by the storm. Once more it was necessary to issue a general prohibition against washing, for no-one knew with certainty how far we were from the next well.

The storm had abated. The morning of November 20th was calm and clear. One of ANDREWS's camels had to be left behind at this camp, for he had stopped browsing and refused to rise.

We entered a valley running north-west. It was partly blocked by two dunes, on which tamarisk grew. HEYDER shot a four year-old argali-sheep in a side-valley. He also wounded another; it fell, but sprang up again and made good its escape. The first argali was taken to the next camp on camel-back, and once more we had meat for a day or so. Mountain partridges cackled on the slopes of the hills. The landscape was lovely and picturesque, narrow valleys meandering between steep, dark hills. From the top of one of these one had a splendid view over the whole extent of Ghashun-nor. Our hunters found a magnificent skull of an old argali ram and an equally striking ibex-skull.

TURNING WEST AGAIN

After crossing the mountains we came out again on open ground, surrounded at a considerable distance by low hills. At camp LIX we had both springs and wells between bound sand-dunes; there was also plenty of fuel, but the pasture was as usual wretched, being woody, dry as tinder, and practically without value as nourishment.

The next day's march led at first through a landscape of dunes, overgrown with tamarisks and saxaules and even surrounded with a few poplars. Everything was dun, dry and frozen. At this place we passed no fewer than four wells. After this the country changed again to hard gravel, and on the yonder side of a ridge the perspective was quite different. To the north-east, at a distance of about two days' march, one saw two flat mountains; and along the route ahead of us was a succession of ridges and combs of dark hills — the same lonely desolation met the eye wherever one turned.

On November 22nd we cut the day's march rather short, for we had not progressed far before we unexpectedly came across two wells. The tracks of wild asses were very common on the route, and in a couple of places there was evidence of wild camels having wandered about. In the afternoon we had snow, but the ground was only half covered.

On the 23rd the sun rose over a compact bank of cloud in the east, ushering in a day of calm and almost warmth. To the north extended a boundless plain. One seemed to divine the rounding of the earth. To the north-west, a two days' journey distant, a considerable mountain-range dreamed on the horizon in shades of lightest blue. If one turned to the left, the eye travelled over the plain to command an equally boundless view. Here and there grew saxaules, some of them quite high, but the pasture was, as usual, miserable.

We set off westwards towards a mountain that soon proved to be a range running parallel with our route, unrolling its rugged contour on our right. After a march of twenty-five kilometers we pitched camp in sheer desert, where a few dried roots at the most were all one could hope to find for fuel.

Our marches had of late been comparatively short. During the past five days we had covered precisely one hundred kilometers. This was in part due to the diminishing daylight.

The sky was overcast and the light so poor next day that the dust-laden atmosphere did not give very good visibility. We passed three old camping sites where big caravans had encamped. They were easily recognizable by the long rows of bright patches where the camels had lain in the dust. Such patches appear when the gravel has been swept away, and are rendered still more conspicuous by the heaps of camel-dung that are left behind. Our route led between hills. A dying camel lay by the wayside: his eyes were still open, and he saw the passing of a caravan for the last time. Happily he was not one of our own beasts.

From the crown of the next undulation a fresh view met the eye to the west. In this direction the ground sloped slowly, a circumstance for which we were grateful, as it meant easier going for the camels. A couple of our Mongols stopped with a camel that refused to proceed; a rider was sent up to the van to get help to carry his chests. The range of hills we had had on our right came to an end, and the view to the north stretched once more boundlessly to the horizon. At a good day's march to the north-west could be seen new mountains. In general we wandered here over shallow gravel basins between low ranges of hills. Frequently enough we traversed dry beds, the direction of whose flow when full it was not easy to decide.

Ever since leaving the Mören-gol we had not seen a single human being. We were travelling in what might aptly be called The Land of Silence.

My usual questions to Mentu after the first four hours of the day's march were: »Is Larson still on the march, or has he pitched camp? Is there any pasture to be seen?» To which the answers were: »Larson is in sight at a distance of three or four li», or »Larson has pitched camp, but I can't see any pasture.» I sometimes had a feeling of shame towards the camels, being borne, as I was, almost as in a sedan-chair while they with their heavy burdens had to take these hundreds of thousands of strides without being able to allay their hunger every day. Now, however, some kilometers ahead of us we saw a gleaming yellow belt. Mentu declared that it was grass. Splendid, splendid, then at last the animals would get something to eat. After a while one could clearly make out the different fields of waving reeds or grass: there, too, one saw small clumps of poplars and tamarisk copses.

THE IKHEN-GOL OASIS

After traversing some two-meter-deep erosion beds we rode over small diamond-shaped fields with sides of five meters in length and walled in with low earthen ramparts. These were abandoned Chinese poppy plantations. A purling streamlet flowed from a spring, forming, somewhat farther down, blue-shimmering sheets of ice.

The tents were set up in an old field, and the camels were already out to pasture. We should have to rest here for some days, for this place, which bore the name Ikhen-gol, was the first oasis we had touched at since the Mören-gol. After the sterile desert tracts we had been through it seemed to us like an earthly paradise.

On the morning of November 25th Heyder shot a gazelle[1] buck, and later in the day three more. He was the expedition's best hunter. Now he had put an end to our meat shortage for the next few days at least. Lieberenz shot also some mountain partridge, singularly beautiful birds with lilac and rusty brown colouring, with black streaks on the head and wings. Their bills were red and the toes, also, had a reddish tinge. Sand grouse and pheasants, too, were among the game to be had. Wild asses (kulans) came to this oasis at night to drink. The paths they had tramped for themselves led in several directions. In a couple of places we observed the spoor of wild camels, wolves and argali-sheep.

The oasis was formed around a river-bed running from south-west to north-east. The big Chinese caravan had left behind two camels and a horse. Three of their dogs, all with bells round their necks, had stayed behind on their own account, hoping to be able to eat their fill when the animals had died.

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[1] The gazelle or antelope in this part of the Gobi is *Gazella subgutturosa hielleriana*. The same species occurs also to the east of the Edsen-gol. The easternmost point at which I have seen one is at Khongkhor-obo in Dunda-gung *hoshio*. F. B.

On our arrival at Ikhen-gol the provisions for the staff were still so plentiful that they would last us till we reached Hami; but the Mongols, who could not save, had flour for only four more days. It was therefore necessary to send a messenger in advance to buy flour — either from the big caravan in front or from the village Ta-shih-t'ou, which lay, as we knew, on the boundary to Sinkiang. MÜHLENWEG, who had learned Mongolian, was commissioned to take the Mongol BANCHE and the Chinese LAO CHANG in forced marches along the Hami route to replenish our supplies as soon as possible. He was given three of our best riding camels and a pack-camel. The sum of money I was able to let him have was four hundred dollars, and Professor SIU added two hundred from his own private funds. MÜHLENWEG was also to purchase peas as extra fodder for our weakest camels. He was free to use his own judgement in either hiring or buying camels for the transport of the provisions on the return journey. None of us had any idea of Ta-shih-t'ou's exact situation or resources. We did not even know for certain whether one could make the necessary purchases there. According to the rather vague information we had been given, however, MÜHLENWEG ought to be able to reach the place in a week; and as at the same time we should be moving westwards we hoped to meet him again within a fortnight.

On the night of the second rest-day at Ikhen-gol the temperature sank to —22° C. HEYDER shot two more gazelles, MASSENBACH shot one more, and LIEBERENZ brought in a hare.

Little yellow mice went scuttling in and out between the tents. When the lamp had been lit in HUMMEL's and LIEBERENZ's tent they entered and showed their appreciation of a tablet of chocolate that lay exposed.

The camels ate with such a will that one seemed to see them visibly swelling.

According to TING, the rock here consisted of gabbro-granite and green-stone.

In the oasis itself there were several springs, and in their vicinity were the remains of a number of huts made of tree-trunks, mud and reeds. These had been erected by the mysterious individuals who had chosen this oasis as the site for their poppy plantations. Why they had abandoned their plantations there was no means of knowing. Perhaps they had been the victims of assault by robbers. Perhaps they themselves were robbers, who had chosen this spot as their place of hiding.

For the first half hour on the march of November 28th we rode over uneven, soft clay-soil, frozen or open spring-streams and through thickets of tamarisks and grass, where we left one of our tired camels behind. After crossing a sharply marked river-bed running in a north-easterly direction we came out into the usual gravel country, where sparse tussocks grew between little stream-beds. The route led us south-west. In S. 13 W. rose the blue pyramid of Tsaghan-bogdo.

We passed an inscription on the ground that had been made by scraping away the black gravel in the form of two-meter-high Chinese ideograms, gleaming brightly up from the underlying clay subsoil. Professor Siu interpreted the writing: »If we are united we receive help from the gods. This route is seldom used, but in order to avoid the revenue stations we must take it once more.»

As had so far been the case along the whole of this route, one saw white tufts of sheep's wool on the bushes nearest the road. These are left when the bales of wool borne by the camels scrape against the thorny bushes. They reveal one of the most important articles of commerce that are transported along these desolate roads. We passed four little newly born puppies, that had lain on their cold and stony bed for two or three days after being abandoned by the big Chinese caravan.

CRITICAL DAYS IN THE DESERT

We pitched our tents in a stream-bed, whose steep, meter-high erosion terrace gave some protection against the icy south-east wind. We were all thoroughly chilled, and hastened to gather round the camp-fire.

During the day's march two camels had been left behind, while a third only just managed to make camp. We were beginning to wonder just how many of our camels would hold out the whole way to Hami. The caravan route we had followed had been murderously waste from every point of view. Of fifteen camping-sites only one had been good. With a continuation of the losses we had suffered on this day our situation would soon become critical.

Still following our south-westerly course next day we rode between dark hills. Then we swung aside to the south, entering a valley forty meters in breadth. It grew narrower and more winding, taking us farther and farther to the south-west and west, finally leading into a more open, arena-shaped valley surrounded by small, dark hill-tops. The ground here was now quite sterile, now covered with sparse tussocks. Here and there were large patches of snow. In a stream-bed we found a well, sixty centimeters deep and containing sweet water, frozen over. We chose this place for our camp the more willingly as the pasture was slightly better than usual.

The west wind forced us to rest awhile. On the morning of the last day in November the tussocks were white with hoar-frost. A condemned camel was slaughtered, as the Mongols and the dogs were in need of meat.

The minimum temperature during the night of December 1st was — 24.7° C. To the north, in lighter and lighter shades of blue, a succession of mountain-ranges met the eye. To the south we had only a low ridge at a little distance. The diminutive stream-beds were tiring. These beds were very shallow, as a rule no more than one or two decimeters in depth and one or two meters across; but they lay so close together that one crossed on an average nine of them in the course of one minute. This sort of country tires the camels and makes their gait uneven. One of the camels had to be abandoned during the day's march. On catching sight of sixteen wild asses our hunters gave chase, but vainly. In the middle of the route we found a letter from MÜHLENWEG; a »2» formed with pebbles indicated that this was his second missive. It was very short, saying only that all was well.

It snowed during the night, and fine flakes came dancing in through the smoke-hole in the roof.

In the morning of December 2nd the ground was covered with two centimeters of snow. However, the sun rose in a clear sky, and the fine little crystals on the ground glistened like diamonds. LARSON feared a snowstorm, and suggested that the next camping site should be chosen in some sheltered valley in the mountains to the south.

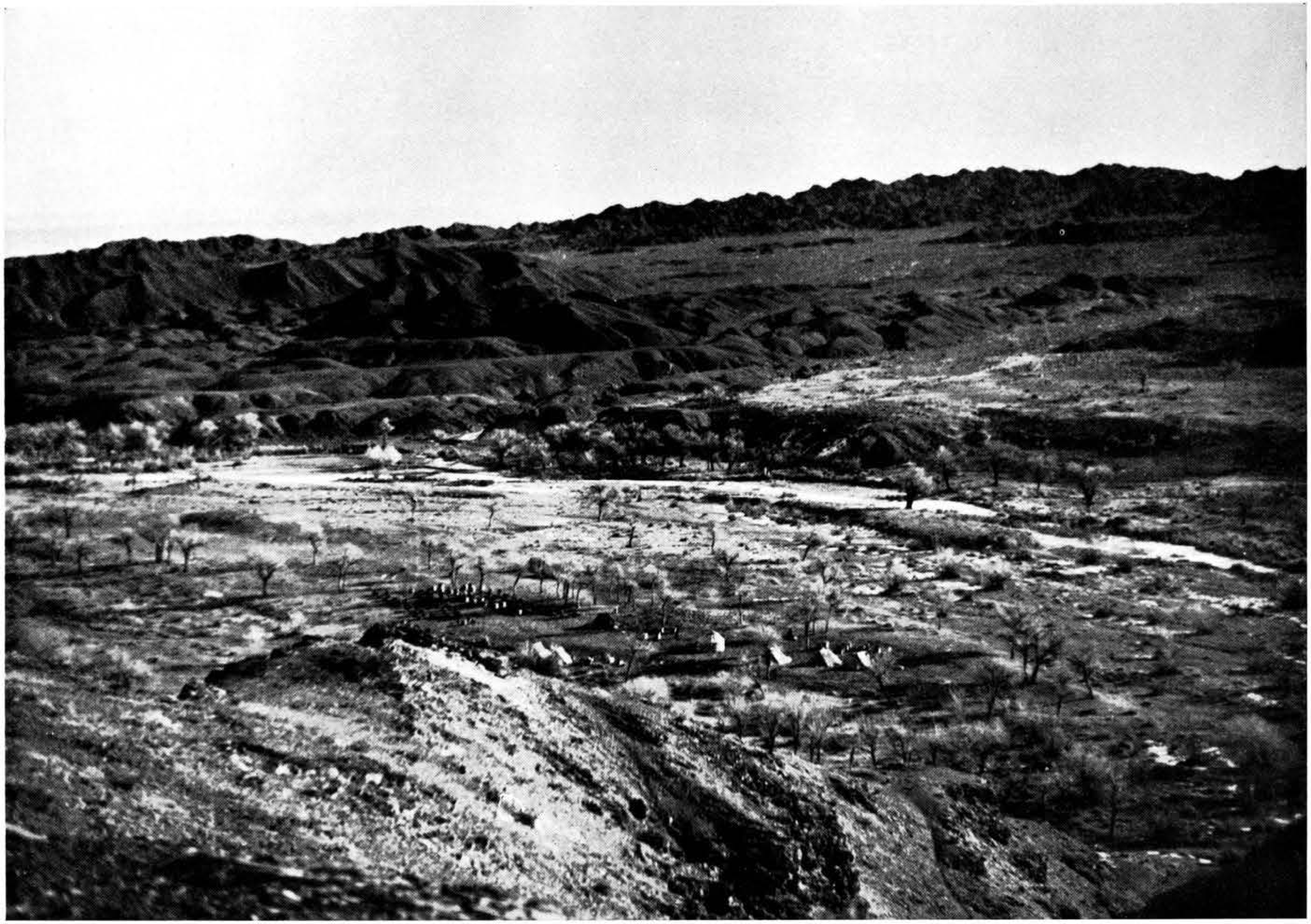
The camels stood out dark against the white ground, but most of them were white-powdered, too. As the dark files of the caravan moved over the snow-covered ground they looked more fascinating and imposing than ever before. The distant hills to the north and west and the nearer ones to the south were as white as marble, and as the rising sun fell on them their sculpturing stood out in wonderful relief and with marvellously subtle colouring. We continued our march to the south-west, the snow crunching with pleasant crispness beneath the camels' pads.

Once more we passed an abandoned camel. He followed us with indifferent gaze, perhaps surprised that we did nothing to help him. Perhaps he thought that we were not the last, but that many others would follow on and give him attention. The thought of the abandoned camels tormented me. Neither LARSON nor the Mongols could bring themselves to kill them. Whenever I brought the matter up they always answered that an abandoned camel might recover his strength by pasturing, even if the opportunities for this were poor, and that he might then be taken along by some passing caravan. I did not give any credit to this explanation, for when a camel refuses to rise he is finished. One could only hope that he would not need to linger, seeing the moon go up over the white snow, before he was released from his wondering and his waiting.

We pitched camp in the middle of the snow in the mouth of a little valley from the southern hills. The Mongols had neglected to fill the six water-tubs at the last well, so now both masters and servants went wandering about with spoons, plates and scoops to collect snow, which was then melted on the fire.

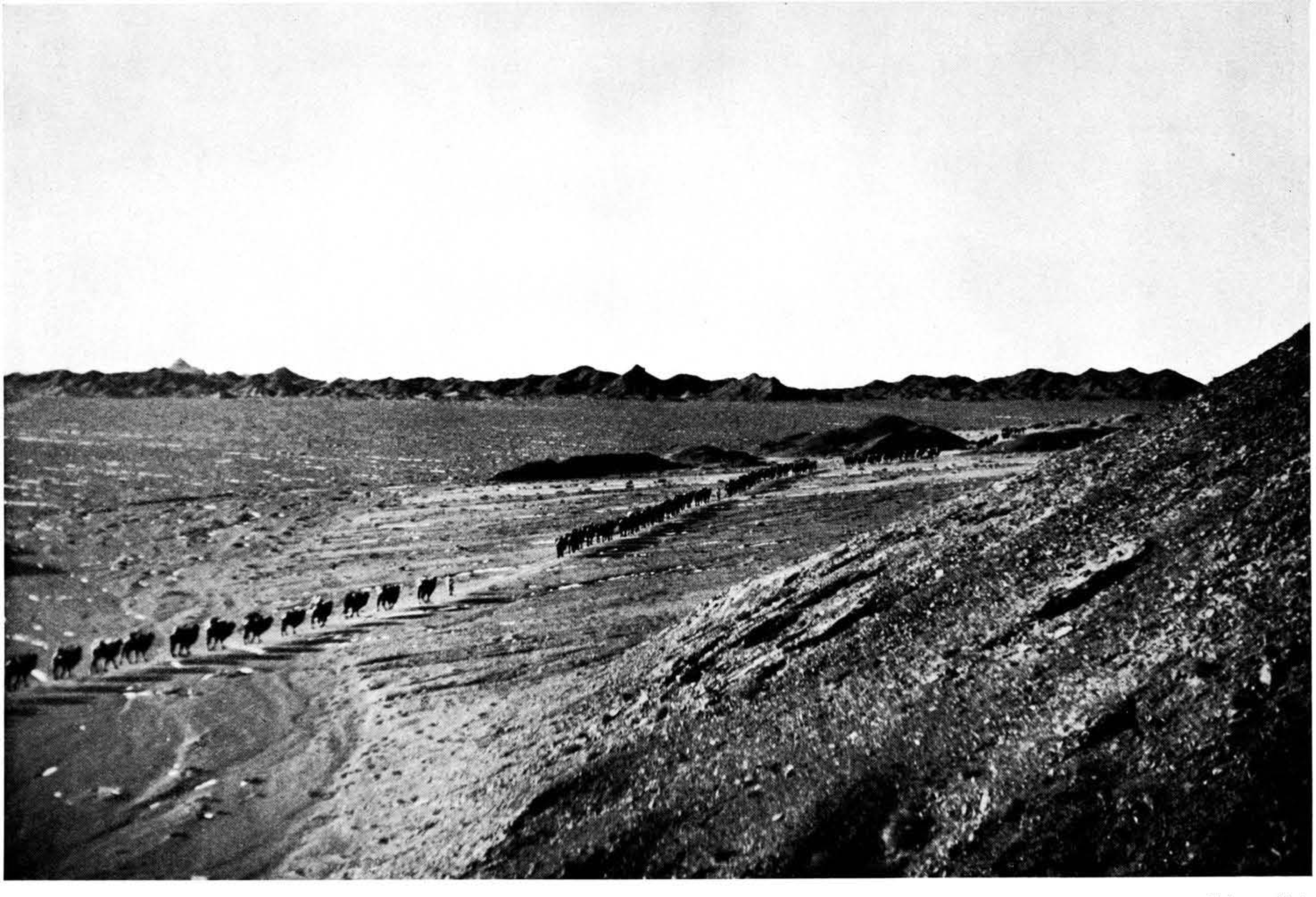
On December 3rd we continued our journey to the south-west, up the valley in whose mouth we had encamped. It was narrow enough, squeezed in between rocks of slate and red sandstone. It soon led us into a larger valley. We had, therefore, crossed the nearest mountain-chain to the south and had it thereafter on our right hand. After a while we reached the mouth of a valley that broke through to the north. It comprised the stream-bed for the whole of the basin

PLATE 35



Our camp in the valley-bottom at Tsaghan-burgasun

Lieberenz Photo



The big merchant-caravan setting out from Tsaghan-burgasun over the moon-landscape of the Black Gobi

Lieberenz Photo

we were now crossing. Just at the mouth of this valley the big Chinese caravan had dug a well, and here a good part of our van were busily engaged watering their camels. The surface of the water was twenty-five centimeters below ground level, and the water itself was no more than ten centimeters deep. Though it filled again fairly rapidly it took time to water the whole caravan. Near the well grew some poplars. An endless view stretched away to the E. S. E.

At the beginning of our day's march we had found MÜHLENWEG's third missive, in which he merely reported that he had not yet made contact with the big Chinese caravan. Here at the well he had hung letter no. 4 in a poplar. This was dated November 27th and was to the effect that he had caught up with the rear part of the Chinese caravan and been told that it was a good five day's journey to the village Ta-shih-t'ou. Flour or peas he had not been able to buy from the caravan.

Camp no. LXVIII was pitched in the mouth of a lonely valley. Our hunters went out after game, but without result. They were not even able to find any fresh tracks.

TSAGHAN-BURGASUN

The 4th of December found us travelling north-west through a labyrinth of little winding valleys. Sometimes one of these would be blocked by a transverse ridge, on the other side of which one came down in another valley. Finally, however, the country opened up somewhat, and in the distance we saw a new oasis squeezed in between the hills, where several springs gave life to poplars, tamarisks and reeds. The tents were set up in a nice little poplar grove. The sheets of ice from the spring stretched a couple of hundred meters to the north before they came to an end. The valley itself fell steeply to the north to a longitudinal valley running from east to west at a considerably lower level than our camp. Even before we reached this camping-place, which evidently corresponded to the region of springs that SEMUKOV had called Tsaghan-burgasun, we had seen a route coming from the south-west and joining ours. This route runs between Suchow and Uliasutai. From our valley-camp we could see its white band continuing northwards over unknown desert.

We spent two rest-days in this place. It was picturesque and attractive, squeezed in as it was between black hills and rich with gnarled old poplars lifting their ragged and depopulated arms over dense yellow reeds and blue-shimmering sheets of ice. The view to the north was almost bewildering. The boundless plain stretched away in shades of light blue reminding one of the sea — an illusion that was strengthened by the fact that this endless sea with its distant horizon was framed between the dark hill-slopes on either side of the valley. One had a strong impression of being at a coast; one might just as well have been at the Coast Range in California as in the heart of Asia.

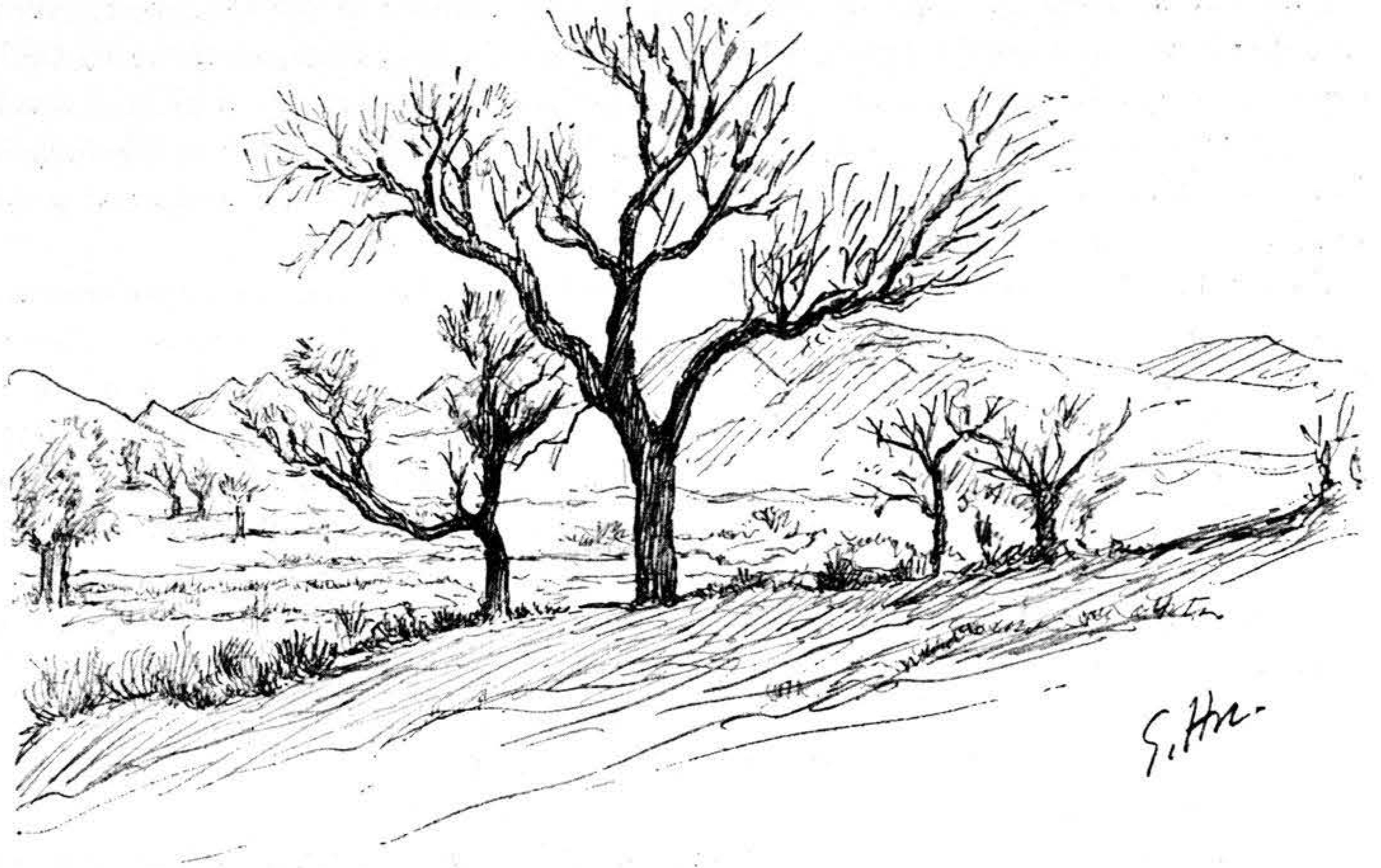


Fig. 22. The Tsaghan-burgasun oasis.

In the night the temperature sank to —21°.4 C. I woke up at half-past two, hearing the dogs barking furiously and rushing off southwards. In an interval between the barking I caught the distant sound of caravan bells. On such a desert route as this the arrival of another caravan is like a connection with the outer world. One hoped for news from China and wondered whether these nocturnal merchants had by any chance anything to sell. The caravan encamped in the valley just to the south of our own camp. I lay awake for an hour, and the sound of bells from successive camel-files reached my ears the whole time, arriving one after the other at Tsaghan-burgasun.

A BIG MERCHANT CARAVAN.

The next morning we found out that it was a merchant caravan of twelve hundred camels and ninety men on its way from Kuei-hua to Barkul and Guchen, while a couple of sections were bound for Hami. About fifty different firms were represented in this huge caravan. The most prominent of these was the firm of Ta Sheng K'uei, a big firm in Kuei-hua. They had joined forces and were taking their wares on hired camels, the owners of which, seven in number, having contributed with one hundred and fifty or two hundred camels each. The goods comprised chiefly cloths, tea, cigarettes and various groceries. Only three of the men had come this way before and knew it. Some of the camel-owners were Hui-hui or Tungan, i. e. Mohammedans. These are said to be shrewder business men than the Chinese. They had been on the way from the Edsen-gol for eighteen days, while we had covered the distance in twenty days. But these wandering merchant communities begrudge themselves any day of rest that is not forced upon them by snow or storm. They counted on being in Guchen within a month; they had set off from Kuei-hua on October 2nd.

On arriving at their destination they generally set their camels to pasture till the autumn, when they set out on the return journey with fresh loads. Sometimes, however, they may start out on the return journey after two months, during which time the camels are fattened with special fodder.

They had several horses in their caravan, and used thin, white felt mats to protect the loads in rainy weather. HUMMEL and Professor SIU bought a number of these to line their tents, and indeed they made the tents considerably warmer than before.

We entered one of the caravan tents, being received in a very friendly way by these simple coolies. Four or five of them sat chatting and smoking their long pipes; six others lay wrapped in their originally white sheep-skins, sleeping in all possible queer positions. They snored loudly, and the most curious noises came now and again from the depths of their sheep-skins. They ushered us forward to the place of honour near the short side of the tent. On the ground they had felt mats to sit upon; near the tent-poles stood a couple of little low wooden chests, beside the foremost of which a fire burned in an iron ring. A kettle was sputtering over the fire and some tea-pots were boiling at the side. The kettle contained *mien-t'iao-tze*, long narrow strips of dough that are cooked in water. They sat noisily devouring this sort of vermicelli soup, and the sleepers were woken up to partake in the meal. They also ate *lao-ping*, a kind of bread; and another item on their menu was *niu-jou*, or beef, of which they had bought a supply at the Edsen-gol. We guests were given cups of boiling hot tea. One always finds these simple Chinese caravan men cheerful, friendly and contented; and they invariably treat visitors with polite hospitality. They laugh and chatter and enjoy themselves; one never finds them care-worn or sullen; yet they are said to earn no more than five dollars a month for their daily drudgery and their night marches through Asia. For these caravans travel only at night.

After the meal they went back to their long pipes, lighting them at the fire. All the questions we put to them were answered with the greatest readiness, all talking at once and correcting one another.

This big caravan was an imposing sight. It was ten times bigger than ours and had four times as many camel-pullers as we. Everything functioned like clock-work, the various tasks being carried out with ease and address. The different sections set off, each in turn, and disappeared in the west. Everything was performed systematically; the organization was exemplary, and one saw that the Tungans knew their job. This was how a caravan should be managed. It was instructive to watch them, to see the long rows of camels lying and eating beans which explained their fatness and splendid condition, though they had reached this place from Beli-miao in fifty-three days.

The two days of rest at camp LXIX did us all good, and the animals, too, seemed to benefit by the spell from work. HEYDER and LIEBERENZ went out hunting again, and came back to camp with a gazelle each, a hare and some partridges. This replenishment of the meat-supply could not, however, last for long, and it proved necessary to slaughter another worn-out camel for the Mongols' larder.

WINDING THROUGH THE HILLS

On the morning of the 7th of December we continued on our journey to the north-west. We had not gone far before we rode past a camel that refused to follow us any further. He gazed indifferently after us, as he stood swaying on uncertain legs by the wayside.

We took our way down through a valley, cutting once more through the line of hills we had crossed a couple of days previously. In its limitless extent the landscape impressed one with a sense of nameless grandeur. With the chain of hills we had just crossed quite near on our left, we rode over and through a labyrinth of small, tiring hillocks, passed a wide erosion bed, leaving behind on either side rocky red sandstone cliffs reminding one of the ruins of fairy castles. Here lay another of our worn out camels, that LARSON had abandoned. In a narrow defile the body of a third victim almost blocked our passage — fortunately it was not of ours. It was the Chinese caravan that had left him to his fate.

From the black mountains to the south a huge, steep, rocky promontory thrust out northwards, appearing to block our westward route. But before we reached it we found ourselves quite near the edge of an abruptly carved erosion bed coming from the valley which opened its dark recesses to the south. Just where the bed widened in the mouth of the valley grew dense patches of reeds. These had recently been burnt off, leaving a field of black ashes. The reeds in the upper reaches of the valley were untouched by fire, and they would suffice for thousands of camels. There the great merchant caravan had pitched camp, and we called a halt just below them. The name of the place was Shara-khulusun (Yellow Reeds). A spring stream of fresh water trickled down here between broad sheets of ice.

HEYDER kept us going from day to day with fresh meat. Here he shot two magnificent gazelle bucks. A couple of our men purchased a small quantity of millet and sugar from the members of the merchant caravan.

On December 8th the route swung round to the south and south-west. The almost luxuriant vegetation came to an abrupt end, and we found ourselves riding along a strange, steep valley. The practically sterile ground was covered with fine gravel. Black, looming walls rose up on either side, falling down sheer to the level floor of the valley. The landscape was impressive but macabre. It was like riding through some valley of death between two rows of gigantic black coffins. Between these opened small lateral valleys with brief, wild, romantic perspectives.

The west wind chilled us to the bone. It was only with an effort that I could use my hands for mapping. After a couple of minutes they grew numb and had to be thawed out in my fur.

Passing a natural gateway between two small hills with cairns, we pitched camp for the night in a desolate spot offering neither water nor pasture and very little fuel. Once more it was necessary to prohibit all washing, while the kitchen requirements were screwed down to the minimum. The dogs had to be content with dish-water, but they were able to wash this down, so to speak, with draughts from the thin strips of snow that still lay on the ground here and there.

In the evening I stood out in the cold, admiring the imposing spectacle presented by the big Chinese caravan as it passed our camp for the second time. Later, I realized that I had somewhat rashly defied the spirits of cold and darkness, for my night was disturbed with pains and restlessness.

Towards daybreak I fell asleep, and when I was roused by MENTU, who had lit the fire at the usual time, LARSON and all the others had already set off, and only HEYDER had remained behind to accompany me and MENTU. As I thought that my indisposition was merely temporary I had said nothing to the doctor. The breakfast-tray, however, was taken out again untouched.

GALLSTONE TROUBLE

And so the camels' Via Dolorosa was resumed. A murderous west wind was blowing, chilling us to the very marrow. We rode through a landscape that was completely devoid of vegetation — not even the usual tough and hardy steppe-tussocks could survive here. A landscape on the moon could not be more desolate than this tract. I swayed about on my tall camel, where I was pitilessly exposed to the icy blast, and longed for the next camp and my medical adviser. Fortunately we were only fourteen kilometers distant from an open spring, around whose sheets of ice the pasture was quite tolerable. A fire was already blazing between the tents, and in its warmth the doctor subjected me to a preliminary examination. He was able to diagnose my trouble at once: gallstones again! He prescribed quietness and rest, to begin with over the next day. SIU supported him, begging me to lie in bed until the attack was over. My protests were of no avail. I did not feel so bad that I might not easily have continued, and wished under no circumstances to hold up the caravan, especially as the situation was critical, the camels tired and the provisions drawing to an end. Here, however, at camp LXXII, Bultin-buluk, there would be no harm in lying over for a day; we had water and better pasture than usual. I was therefore put to bed immediately and cared for like a babe in arms.

In the course of this rest-day (December 10th) a Mongolian caravan from Anhsi arrived at the spring. It was taking grain and flour to Dzasaktu-khan. A couple of days before their arrival here they had met NORIN's column, and they told us that on this particular day the latter would be camping at the spring Sebestei, distant three days' journey to the southwest. NORIN's camels had been making a good pace and they looked in good condition. This news was a relief, for I had felt a certain anxiety for the column, that was travelling through unknown country. The Mongols themselves had been thirteen days on the march from Anhsi, and they had a further six days' march ahead of them before they would reach their homes.

The great question now was: should we be able to reach Sebestei before NORIN, BERGMAN and v. MARSCHALL had left, or would our paths only cross at the spring?

Just before daybreak another caravan from Anhsi arrived. It was led by Chinese, taking flour to some destination in Outer Mongolia. They had been fifteen days on the way and would accomplish their journey in another ten. It was evident that our own route was intersected at Bultin-buluk by one of the few roads between Anhsi and the grass-lands in the north.

For some days the whole of the staff had been obliged to go on foot, an inconvenience that was also shared by the Chinese without any grumbling from their side. As the camels grew thinner, and at least one of their number had to be abandoned almost every day, it became necessary for us to economize their strength and to use also the riding-camels for the loads. The Mongols, who were not accustomed to walking, were still mounted, and I throned as usual on my tall riding-camel.

The doctor walked along by my side when we started off at half-past eight on the morning of December 11th. The air was still and the sky overcast. After traversing more open country we entered a labyrinth of little hills. The rock consisted of granite and diabase. After a while we rode past an emaciated camel, left to die in solitude.

When we had been a couple of hours on the march the doctor ordered a halt. A blazing fire was lit and I was tucked up in sheepskin coats on the soft sand. By this time I had such pains in the region of the bile-duct that he gave me an injection of morphine and caffeine, which came as a release and a blessing. For a full two hours we lay by the fire; and when we then resumed our journey in the tracks of the others I felt very uncertainly perched on my tall, swaying mount. Never have

I so longed for a camping-site. We covered 20.6 kilometers and I mapped the route the whole way.

At last we could make out the smoke from a camp-fire in the distance, and presently we had joined the others. My yurt was already erected, and I was hastened to bed as if in a field-hospital.

That evening HUMMEL moved into my yurt in order to be able to attend me when necessary. He was movingly solicitous, and he did not get much sleep that night. Nor did I.

On December 12th we set off as usual after the caravan, that had started at four in the morning. With little hills to the left, and rather more considerable ones to the north-west, we traversed slightly undulating ground to reach a flat ridge, to the south-west of which was an open space with small hillocks and hogs' backs. We halted in a belt of tamarisks to rest by a fire.

A couple of kilometers from the camping-place for the night (LXXIV), two tall figures, silhouetted against the sun, could be seen riding rapidly towards us. One was LARSON, the other NORIN. It was a pleasure to see NORIN safe and sound, and to hear that BERGMAN and MARSCHALL were encamped at the Sebestei spring (properly Narin-sebestei) at a distance of scarcely fifty li to the south-west.

NORIN stayed with us overnight. At this place there was no water, and the pasture was poor; so it was now a matter of transporting my suffering body in one way or another, to the spring Sebestei, where water, pasture and fuel were to be had, and whither the doctor now commanded his patient for a couple of week's rest. With the same irresistible authority he forbade me to ride, as the swaying gait of the camel was clearly an aggravation to my restless gall-stones.

But how in the world was I to get to Sebestei, being unable to walk and forbidden to ride? There was of course no vehicle, nor would it be possible to procure one. Moreover, the lack of water at this camp would in any case compel us to set out for Sebestei's spring the very next day. Professor SIU voted for a sledge made of tent-poles and covered with boards from empty crates. It might be drawn by camels or men. LARSON declared that such a contraption would not survive more than two kilometers in this gravelly country. He for his part suggested a bier, to be borne by four Mongols mounted on quiet camels. I assured him that I had not the slightest desire of climbing aboard such a 'flying-machine', that any moment risked being squashed between the four camels, if it were not torn asunder the next, as the frightened animals bolted in four contrary directions.

JOURNEY BY STRETCHER

At half-past nine next morning we set off. On either side of an iron camp-bed two tent-poles had been lashed and then bound together. The bed consisted of my sleeping-bag and some cushions. Muffled up in furs I lay down on this bier, being then covered and tucked up in the big sheepskin rug. Together with all accessories, this improvised stretcher must have weighed at least as much as myself. A good forty kilograms pressed upon each supporting shoulder.

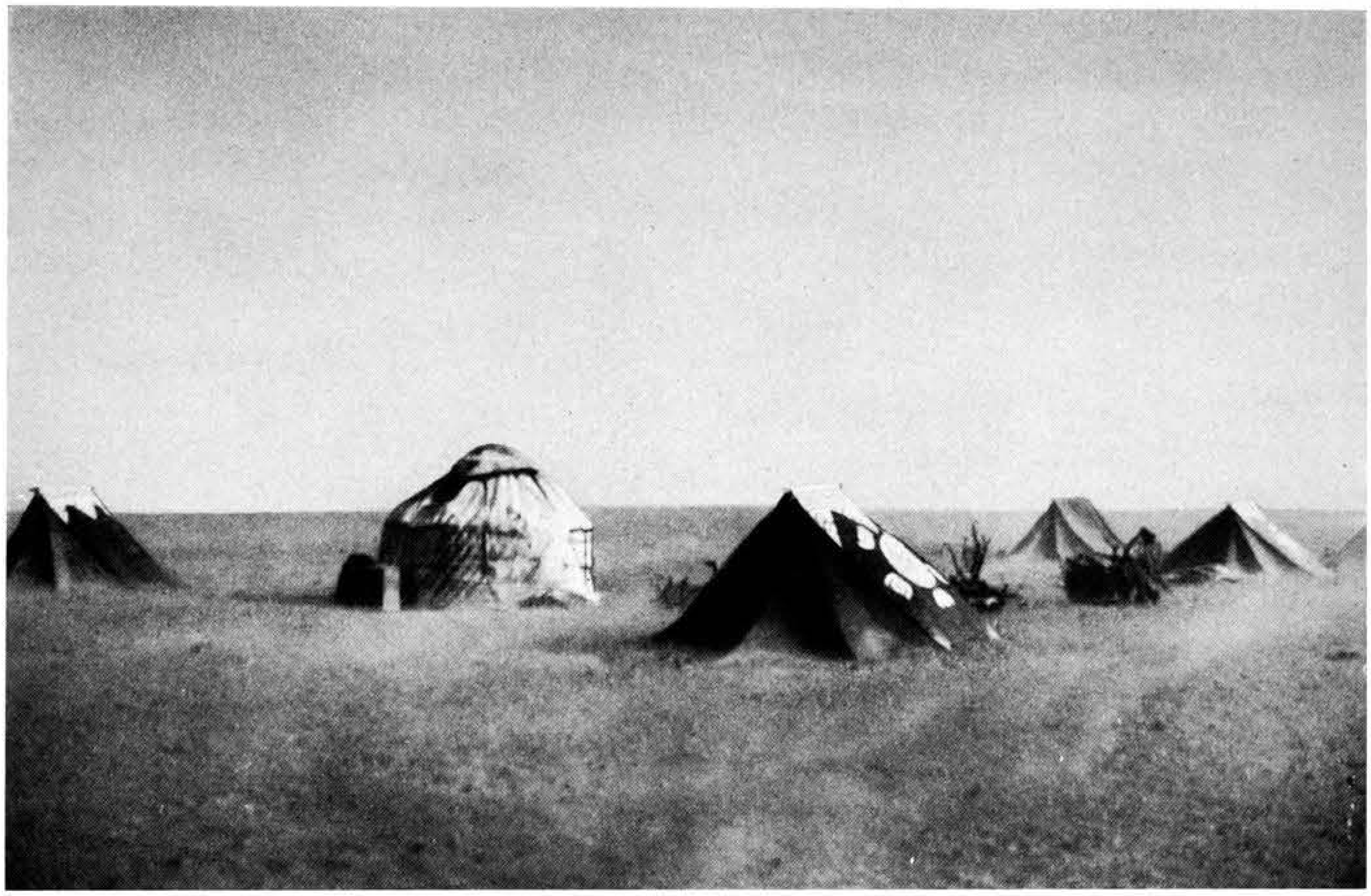
The first team of bearers, HEYDER, HUMMEL, NORIN and MASSENBACH, lifted up the bier and marched off. They kept a steady, even pace. I found myself swaying with a comfortable rhythm, and I should soon have been rocked asleep if my situation had not been so unusual and exciting. We arranged that two teams should take turn and turn about every seven minutes. I had my watch within reach and called a halt for change of bearers as soon as the seven minutes were up. Meantime, I made my notes in a scribbling block as usual.

On either side extended the endless plains, here and there interrupted by low ridges and hog's backs. Tussocks and tamarisks grew but sparsely, as usual, and the ground was almost even.

It was a vast expanse of the earth's crust that extended to either side of our route during this month. An arid desert where no human being could find a refuge. We had not seen a single sign of life, let alone a nomad yurt. How different from the journey to the Edsen-gol, where at first we had passed the houses of little settlements, and later the tents of the nomads. But here there was no living thing besides ourselves and the camels. The resistance of our animals was sorely tried in these desolate wastes, for the desert did not afford them sufficient nourishment. If they could not hold out, our situation would be more than critical. By now, the tension in our caravan was increasing with each succeeding day, for it was not difficult to realize that we were headed straight for a decisive crisis.

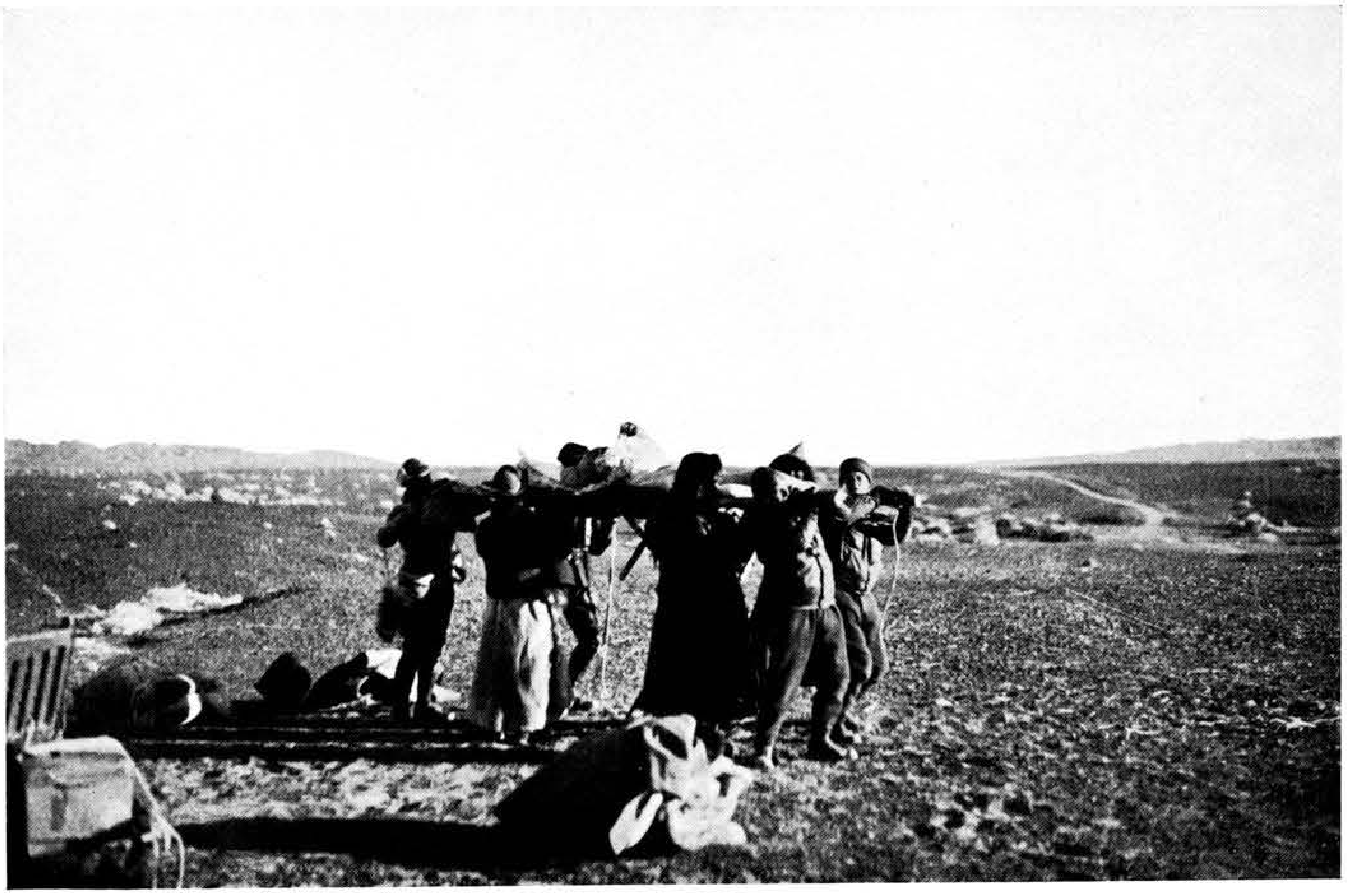
Another half hour passed, and now, darkly silhouetted against the setting sun, a vivid and brush-tempting group of riders made their appearance. They proved to be of our Mongols and Chinese, who had been sent from Sebestei to meet us. We halted. They dismounted, and four of them immediately stepped under the bier. They were fresh, and started off at a smart pace. Their steps were short, but they went at a half-run, and the hills on either side slid behind me more rapidly than before. They did not keep step — it was like rowing in a choppy sea.

The sun set and twilight fell. We all longed to reach Sebestei's spring before nightfall. It was chill, and the cold penetrated my furs. At last we saw a fire flickering ahead. NORIN's, BERGMAN's and MARSCHALL's tent was the first we reached, and I called a halt, though LARSON had set up our own camp three hundred meters farther on. However, I could stand no more, I had had enough. The bier was deposited in the opening of the tent and the doctor tucked me up snugly inside while my yurt was being erected. What a pleasure to come from the increasing chill of evening into a warm tent! So, in strange circumstances, we had arrived at camp LXXV, the most fateful one of our journey.



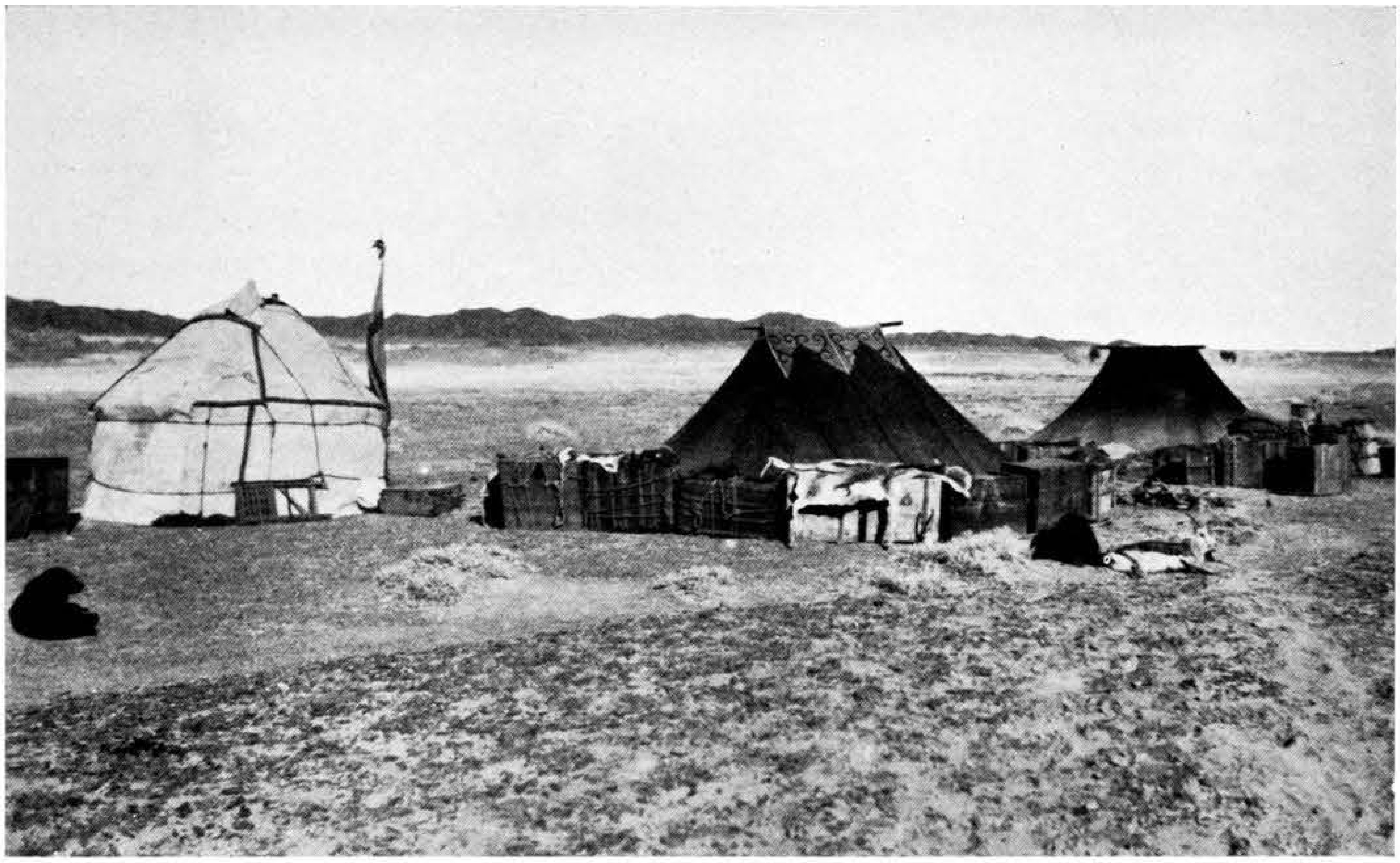
Sandstorm in the Black Gobi

Lieberenz Photo

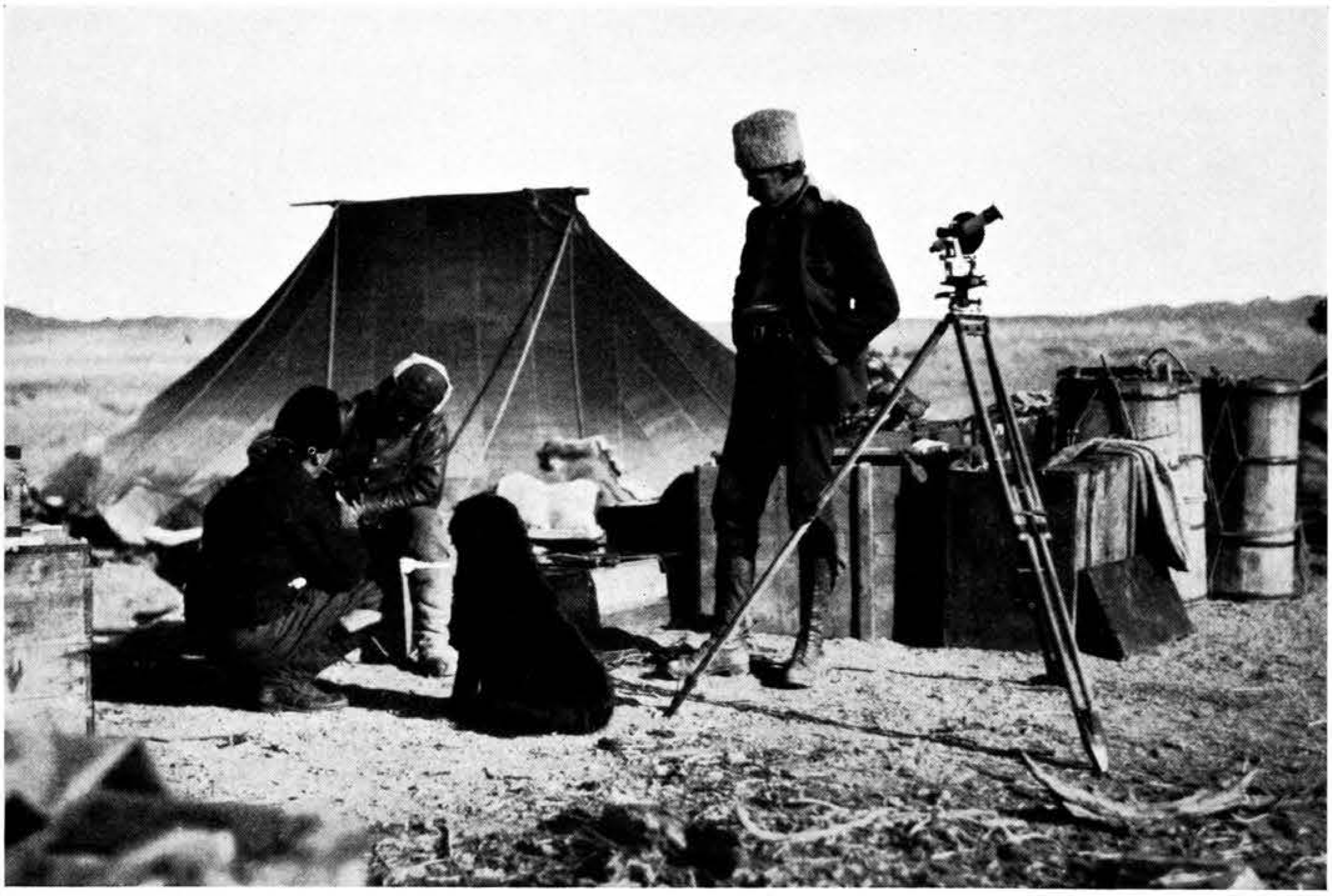


The author carried on a stretcher

Lieberenz Photo



The Christmas camp at Sebestei *Bergman Photo*



The author, Hummel and Norin in the Christmas camp at Sebestei *Bergman Photo*

RE-ORGANIZATION OF THE CARAVANS AT SEBESTEI

Before I fell sick it had been our intention to leave LARSON and a number of the Mongols with the whole of our heavy baggage at Sebestei, while the whole staff with the necessary luggage and provisions and all of our 113 camels betook themselves to Ta-shih-t'ou. The camels were then to have been left behind with the Chinese merchants at this place, to be fattened up with beans or oats; and the rest of our Mongols were to stay behind to look after them. A caravan of hired camels was then to have been sent back to Sebestei to fetch the luggage that had been left and LARSON and his Mongols. Then, either on hired camels or on the best of our own, I and the whole staff and the Chinese boys were to have proceeded via Tash-bulaq to Hami, where we had hoped to arrive by Christmas.

On account of my sickness, however, this plan was slightly changed. Thus, HUMMEL and I were also to remain behind at Sebestei. The doctor absolutely forbade my continuing on camel-back, and prescribed a couple of week's complete rest. During this fortnight of rest the others, who would resume the journey westwards, ought to be able to procure a cart with a team of mules and horses with which I might be taken, without the risk of a relapse, to Hami.

LARSON considered the risk of dumping the heavy baggage at Sebestei all too great, because of possible robber-bands; and he suggested that it be taken along with them, our own camels going under load. He would march at night, so that the animals could graze during the day. I approved his plan the more readily, as I have always been unwilling to leave valuable baggage behind anywhere, for one can never be sure of its being fetched afterwards.

It was by a curious dispensation of Providence that our marching route happened to cross the route taken by NORIN's column just at the Sebestei spring. Since NORIN had a couple of days' start owing to the fact that his road was straighter than ours it had hung by a hair whether we should find him at the spring.

In the course of the conferences held on December 14th NORIN suggested that he and BERGMAN should remain behind with HUMMEL and myself, an extra point in favour of this proposal being that it would give him an opportunity of making a more comprehensive topographical and geological investigation of the from many points of view interesting country in the neighbourhood of Sebestei. Moreover, both he and BERGMAN had more than enough to keep them busy with the expansion of notes and inking-in of maps. Needless to say, both HUMMEL and I saw our enforced sojourn at Sebestei in quite other and brighter colours when it had been settled that NORIN's and BERGMAN's tent was to remain beside our yurt during this uncertain period. We had seen all too little of each other on the long journey from Pao-t'ou, but now they were to throw in their lot with us for — Heaven alone knew how long.

After mature deliberation, and in collaboration especially with Professor SIU, the following plan of campaign was drawn up for the immediate future:

1. LARSON was to take the main caravan and practically the whole of the baggage to Ta-shih-t'ou. He was to be accompanied by the German and the Chinese members of the staff. LARSON was allowed to borrow seven of NORIN's camels, as they had had a less trying time than LARSON's beasts. When we sent MÜHLENWEG on ahead to Ta-shih-t'ou we had expected him to be back by the 8th of December. Later inquiries, however, had apprised us of the fact that the distance was much greater than we had supposed. But if MÜHLENWEG had found what he was looking for he ought certainly to have been back by now. Perhaps there was nothing to be got at Ta-shih-t'ou. I therefore left LARSON and his companions to judge the position in the west themselves, giving them a free hand to act as they deemed best.

2. MARSCHALL and LIU, followed by the digger CHIN and a camel-man, were to proceed westwards on the Hami route by forced marches. At the first place where a relief-caravan could be got together they were to hire camels for the baggage left behind at Sebestei, buy the provisions we should need for our stay here, and, if possible, hire or purchase a cart and three mules for my account. MARSCHALL and LIU also borrowed seven of NORIN's camels. They were to return as quickly as possible. When MARSCHALL had taken over NORIN's stock of money we had just seven dollars left at Sebestei.

3. LIU was to return here with MARSCHALL in order to be able on his second westward journey to make a map of the marching-route, as this would of course not be possible during the forced marches at night.

4. HASLUND was to meet us at the village of Tash-bulaq, situated about one hundred kilometers to the east of Hami, bringing with him money and post.

For most of us there was little enough sleep that night. The provisions had been gone through and divided up, and we who would be remaining behind received our due share. At the last moment HUMMEL confiscated the big gramophone for us, for those of the company who would be taking the Hami route would scarcely have a chance of listening to it, while as it turned out, it contributed in a high degree to making our stay at Sebestei enjoyable.

Late that evening those who would be leaving us came to my yurt to say Goodbye. I bade them each severally a hearty farewell, expressing my hope that they would soon manage to collect the relief we needed in the form of camels, cart and provisions.

At a quarter past five on December 15th the caravan set off in pitch darkness. An hour later MARSCHALL's section followed suit, and finally, at seven o'clock Professor SIU, together with HUANG and the boy WANG, also left camp. All bands were now broken, and an impenetrable silence sank around us. We were four Swedes, two Mongols (MENTU and a Lama from Alakshan), NORIN's three Chinese, WANG, the cook, the coolie CHANG and LAO WANG, a camel-man. Without counting riding-camels we should have needed twenty-five camels to be able, on my return to health, to resume our journey. We had eight of NORIN's camels and four worn out animals that LARSON had left behind. We were therefore for an indefinite period nailed down at Sebestei, and should be unable to make any move until reinforcements in the way of pack-animals arrived from some quarter.

DELAY AT SEBESTEI

Our camp lay on open ground. To the north the horizon comprised a black chain of mountains with short valleys. On the crest of a little hill the Swedish flag fluttered from its wire-stayed pole, visible over a wide radius to gazelles, wild camels and wild asses — for these were the only neighbours we had, and of these, both the last-mentioned animals were very rarely seen in our vicinity. From the flag-hill one had a boundless view to the south over a panorama of blue undulations and flat ridges.

Six wild camels came to the sheets of ice from the spring to drink. When BERGMAN and NORIN crept nearer for a shot they went careering off to the north-east. Instead, BERGMAN managed to bring down a beautiful gazelle buck.

Late on the evening of the 16th we heard caravan bells. A Chinese caravan pitched camp a little to the east of ourselves.

Hard north-west wind the whole day of December 17th. NORIN went over to the Chinese caravan and purchased fifty catties of flour, forty catties of millet and a cake of brick-tea — all for fourteen dollars, including two boxes of Hatamen cigarettes. This imposing sum had been mustered after BERGMAN had discovered ten dollars of private money in one of his boxes. We were now left with precisely ten cents in our treasury. A little later, however, BERGMAN discovered a further three dollars at the bottom of a suitcase, and was enviously called »Capitalist!»

The caravan hailed from Suchow, and had been in Uliasutai to sell flour. They were now on their way home, and hoped to reach Suchow in seventeen days' time. In the afternoon they resumed their southward journey.

A part of the merchant caravan returned without loads from the south. They wanted two of our men to accompany them a couple of days' journey to the north as an escort in case of attack by robbers. We were, however, obliged to refuse this request, as we were ourselves sufficiently short of men for such an eventuality.

On the 19th and the 20th we had a raging storm. Every day of bad weather meant an extra one or two days' wait.

Where was MÜHLENWEG? He had now been twenty-six days gone. His non-appearance was puzzling.

The storm raged the whole night, but abated somewhat during December 21st, only to increase in strength in the afternoon. Norin tried to do some field-work with his surveyor's table, but it shook so in the high wind that he was obliged to give up and return to camp.

Bergman continued to keep us in fresh meat. Nearly every day he shot one or several antelope bucks. The flesh of these animals makes delicate eating if hung for a week, and if one has plenty of fat to fry it in.

I was now up and dressed all day, staying in Norin's and Bergman's tent while my yurt was tidied up.

Day followed day, and each evening we swept the western horizon in vain.

CHRISTMAS IN THE DESERT

And so came Christmas Eve. Already in the morning we were surprised with the first Christmas present. Our bitch Snappy whelped — one little black bundle after the other, seven in all. A really thoughtful mother to time the event so prettily, and while we were stopping in the one place for a length of time!

For the last two days Hummel had been busy with special preparations for a worthy celebration of Christmas Eve, and to-day he devoted himself entirely to this task. He baked, roasted and cooked in the kitchen-tent; he rearranged the 'furniture' and quite transformed the interior of my yurt. By nightfall I could scarcely recognize it for the same dwelling. It had been turned into a snug and cosy drawing-room with settees ranged around the walls; there was a Christmas-table with table-cloth, beautifully laid with plates, glass and a home-made branched candle-stick which served instead of a Christmas-tree and gave a festive glitter to the room. The 'settees' had been devised simply by folding sleeping-bags once over and covering them with rugs. The walls were decorated with mats and light-blue *khadaks*. The part of the yurt nearest the door was separated off by two Swedish flags hanging down from the roof.

One might have fancied oneself transported to the after-saloon of a little ship, on account of the half-round shape of the room. But on the other hand everything was decked out in such festive guise that one had a strong impression of its being above all the intended celebration of Christmas that had set its stamp upon the transformation. The menu the doctor had drawn up for the occasion was also a very special treat.

The festivities began with Swedish *smörgåsbord*, as complete as our limited supply of provisions would allow. But we lacked neither Swedish crisp-bread, that we had not tasted since leaving Peking, nor the traditional Christmas ham. And Bergman furraged in one of his trunks to produce a bottle of Swedish aqua-vitae. The next course was *Consommé à la Gobi*, followed by *Selle d'antilope* with green peas and pickled cucumber. Dessert consisted of *Glace aux glaciers de Tien-*

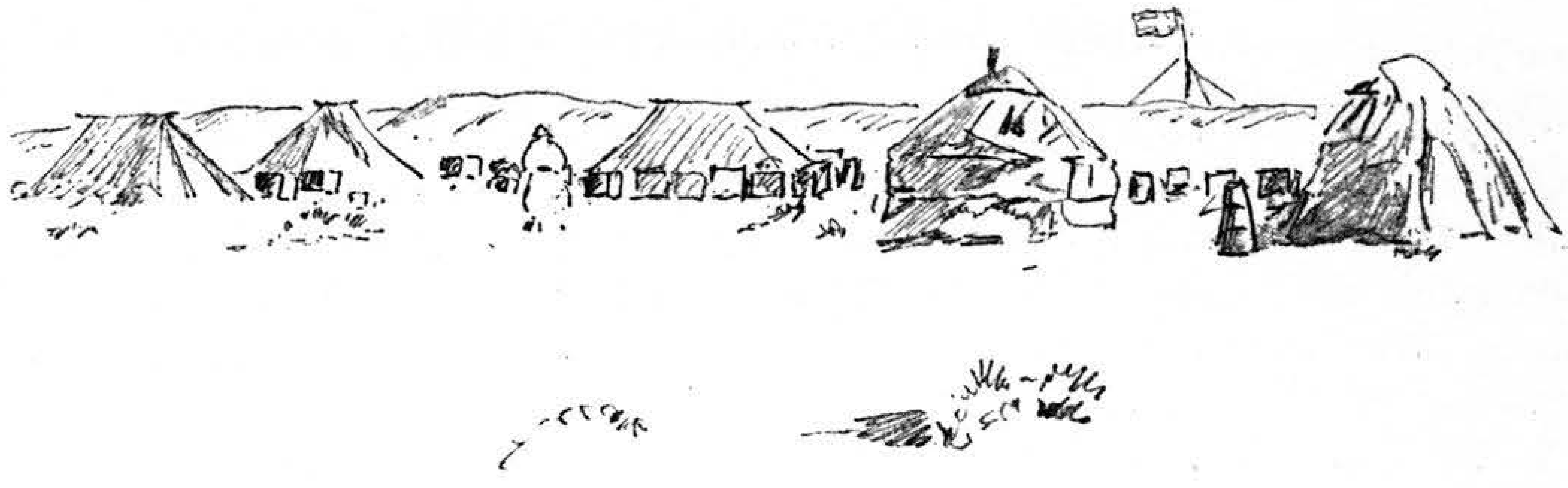


Fig. 23. Camp Sebestei

chan with cakes; and we wound up the meal with cheese and biscuits. Then we sat back to coffee and the doctor's cognac.

We spoke of our dear ones at home, wondering, as the hours went by, what kind of Christmas they were having, knowing well that they would be wondering with the same eagerness how we were faring.

The gramophone sounded more festive than usual, and when the last record was put on (HARRY LAUDER's »Keep Right On to the End of the Road») it was already one o'clock.

And so passed our Christmas in the desert.

Late on the evening of the 26th we heard the clanking of caravan-bells from the north-east. A crowd of Mongols with their animals pitched camp at the spring. They were from Uliasutai, bound for Anhsi, whence they intended to fetch flour. Their hundred camels were now without loads. If we could only hire them to take us with our baggage to Hami! But as they asked nine hundred dollars nothing came of this, and we contented ourselves with buying forty catties of flour from them with our last three dollars. The following morning the caravan disappeared to the south, and once more we felt like marooned sailors, watching the ship that might have saved them disappear over the horizon.

The year 1928 was ushered in over the Desert of Gobi to the accompaniment of new storms. One day, however, the 3rd, was calm and clear. To the W. N. W. we could see, dazzlingly sharp and beautiful, the easternmost peaks of the Qarliq-tagh, looking like steep pyramids. These peaks are about 4300 meters in height and situated about 200 kilometers distant from Sebestei. We gazed for long at these wonderful giants, the most easterly offsets of the T'ien-shan, through our big portable telescope on its tripod, all agreeing that we had seen nothing more beautiful in Mongolia.

The cook informed us that oatmeal, sugar, salt, pepper, coffee and green peas had come to an end, that the following day he would be baking the last lot of bread, and that we had only some handfuls of rice left in the larder.

FIRST NEWS FROM THE WEST

On January 4th, Mentu woke us up with the words: »Two mounted men coming from the west!» We rushed out. Our telescope was mounted on »Flag-top Hill». One could already make out that the mounted figures were Mongols. They were riding their camels hard. Finally, we recognized them as Bongkh and Sonin Gipch. With their weather-beaten faces and fluttering goatskins they might have been cast in one mould with their mounts.

In five nights they had ridden from Ta-shih-t'ou, bringing fifty catties of flour and several exciting letters from our absent companions. One of these was from Marschall. He had heard that Hempel-Haslund and Mühlenweg had reached Hami, and that Walz had been seen under military escort on the way to Urumchi.

Here follows Heyder's report on the journey from Sebestei to Ta-shih-t'ou:

On the first day he had shot six gazelles and seen one wild camel. The 17th of December: no water, hard west wind. Two of the camels died. The 18th: Snow-storm, short march; no water. The 19th: severe snow-storm. One of the camels was shot to provide meat. The 20th: the storm increased in strength. They lay still. The 21st: raging snow-storm; impossible to set out. The 22nd: two camels froze to death; all the others seriously weakened. It was determined that Larson, with two Mongols and the whole of the baggage, should be left behind; the others, with the camels and bare necessities, should continue. The 23rd: start with 102 camels, of which number two died on the way. No water, but snow. The 24th: severe snow-storm; only three kilometers' march; no water. The 25th: storm; a couple of the camels succumbed. The Mongols got flour for the last time, after which they would have to live on camel-flesh. The 26th: hard wind; one camel succumbed, and one was shot for the meat-supply. The 27th: another camel fell by the wayside. The 28th: reached four yurts, the first since the Edsen-gol. Bought flour, sugar and five sheep. The 29th: reached Ta-shih-t'ou. One camel died.

They hoped to reach Hami in seven days. The two Mongols were despatched to us.

Finally, there was a message from Larson, saying that he was encamped 160 li to the west of Sebestei, that the camels' resistance had been broken by four days' snow-storm, and that he could manage with the supply of flour he had been left.

So now we had received the first news — if not from the outer world then at least from our own van, hearing something of the hardships they had been through.

RETURN OF MARSCHALL

For twenty-four days we four Swedes had been frozen in at the Sebestei spring. Although the most perfect harmony had prevailed we were beginning to feel the monotony, and longed for something to happen. On the evening of the 5th we were all four sitting round the »writing-table» in my yurt. The fire crackled now and then; otherwise everything was silent — except for the wind that whistled round the yurt. Suddenly there was a knock at the door! Our servants never knocked, they simply entered. The dogs had not barked. »It's MARSCHALL!» I cried with conviction. »Yes, it is MARSCHALL!» he replied in pure Swedish, and added: »Have you got anything to drink, boys?»

I wonder whether MARSCHALL had ever before in his life been so enthusiastically received. When he had been sufficiently clapped on the back we literally thrust him into a corner among cushions and furs and poured a good honest drink down his gullet; he was frozen to the bone. MENTU stoked up the fire as never before. And meantime MARSCHALL replied with his usual imperturbability to the storm of questions that hailed down upon him.

This was his story: After a hard journey of forced marches I landed up in the little village of Miao-erh-ku, where in the midst of a lot of wild, rollicking soldiers I felt something like HILDEBRAND in the camp of the Huns. I joked and drank with them, and we became friends. They helped me to hire twenty-five camels, buy provisions and get together the wood for the sedan-chair we carpentered in haste. Then I came back here as quickly as I could — been travelling for seven days, and had to lie low for three more because of snow-storms, and oh! how I froze! The day before yesterday I spent the night with LARSON, leaving him a supply of mutton. To-day it seemed that we should never arrive. We travelled mile after mile, sometimes mounted and sometimes on foot, to keep our circulations going.

We thanked MARSCHALL for the splendid way in which he had carried out his difficult mission. He had had the student LIU as his interpreter: but he would never have succeeded as he did if he had not possessed his wonderful humour and his way of taking both Chinese and Mongols.

Finally, MARSCHALL mentioned quite casually that certain difficulties had arisen for the expedition, but that they would doubtless be overcome after my arrival at Hami. Wild rumours had been circulated about us. We were the advance-guard of an army of invasion, that had evil intentions upon Sinkiang. Troops had been mobilized, eastward-bound caravans had been stopped, to deprive us of the possibility of buying provisions in the desert. Except for two hundred letters that had been sent to Hami, the whole of our European post had been sent to Peking for censorship. It was already sufficiently clear that we were the objects of profound suspicion and that there might after all be some justification for the pessimistic prognostication that we should be obliged, on reaching Hami, to return the way we had come. Perhaps we should not be allowed to cross the border into Sinkiang, the goal of our proud plans.

The hour of our release had struck at last. In a hard north-west wind and with a temperature of twelve degrees below zero the baggage was packed and the sedan-chair mounted on its long poles, being then covered with a tarpaulin and made soft with a lining of felt.

Oh, these freezing winter-storms! Also on January 7th we were unable to set out. With their bulky loads the camels could not have made any headway in the teeth of the icy wind.

DEPARTURE FROM SEBESTEI

On January 8th the storm had abated, and just after sunrise NORIN was ready with his section. The five camels in one of his files were recalcitrant, and flung their loads to the ground. The rest were kept in hand, and after a short delay his caravan disappeared in the south-west. A little later we others followed after, leaving Sebestei to its desert solitude, where BERGMAN had brought down no fewer than twenty-one antelopes. Our »Christmas-tree» we had left behind on the little hill where the flag had waved, anchoring it firmly to the ground with stones. Except for three that we had killed, the puppies that had been born on Christmas Eve were comfortably nested in a felt-lined box on one of the camel-loads. Snappy, their mother, sprang yelping to and fro, looking for her youngsters among the camels. Having been muffled up like a swaddling babe by HUMMEL, I took my place in the sedan-chair among cushions and furs, for I was still convalescent, and had to be careful. The two camels that bore me went tandem, one before and one behind. The ends of the poles attached to my chair rested in loops of strong rope, which lay between the camels' humps. MENTU mounted the foremost camel, and the strange equipage moved off. I had never before travelled just in this way, though I remembered a journey in a sedan-chair borne by mules. The camels walked at a steady and leisurely pace, and the vertical up and down movement was by no means unpleasant: it was heightened when the animals walked in step. The route was now mapped by NORIN, who went on foot and counted his steps. On this first day we covered thirty li.

The Gobi preserved its character of a vast gravel desert, even when we progressed farther to the west. The ground was generally sparsely covered with tussocks, while occasionally one saw saxaules or tamarisks. After twenty li we passed the spring Ulan-buluk, where we saw gazelles and partridges in the reeds. The day's march was forty-five li.

During the night of January 10th the temperature sank to —26°. 7 C., and in the morning it was piercingly cold.

We journeyed on towards the south-west between dark, low ridges of sedimentary slate and agglomerate. The amount of snow on the ground increased, forming white arrow-heads on the lee side of the tussocks, all pointing north-east. In hollows in the ground the snow lay sometimes one or two feet deep. The camels

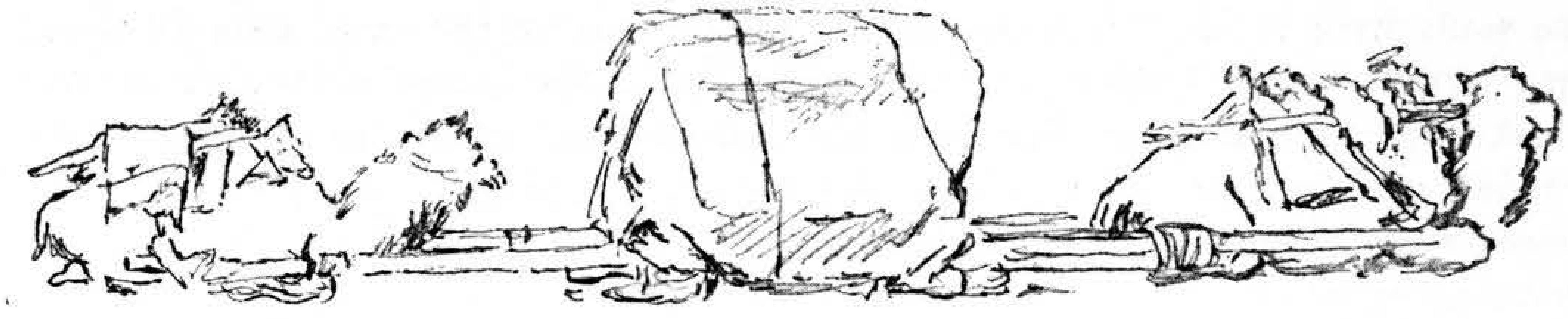


Fig. 24. My camel-borne sedan-chair

slid and stumbled in the drifts, and my strange vehicle creaked and grated against the 'shafts'. Slowly and heavily our dark procession made its way over the crunching snow, that presently seemed to cover the ground completely. Before us lay one of LARSON's dead camels, almost snowed over. BERGMAN's riding-camel fell at the beginning of the day's march; and MARSCHALL's faithful beast succumbed quite near our camping-place for the night, that we reached after covering fifty-one li. The altitude was about 1400 meters. There was no water at this camp, but we melted snow. Fuel was scanty, and the camels had to content themselves with sparse artemisia.

It was lucky for us that on the 11th of January we had only a short day's march, no more, in fact, than eight kilometers, for there was a hard wind and it was bitingly cold. The drifts glittered as if painted in white oils, and loose snow whirled over the ground. The sun, that had been out in the morning, paled and hid itself among the clouds. Were we in for a snowstorm, we wondered? And speculated as to whether we should reach »Hotel LARSON» for the night or be snowed in in the wilderness. We could see but a short distance in front of us. The wind whined and shrieked round my swaying 'cab', and the tarpaulin smacked and slapped against the wooden framework of the chair. On a little ridge, where we were more exposed than hitherto, the camels seemed to waver, and the wind swept drift-snow over the ground like flapping shrouds. To leeward of the tussocks the drifts lay like white dolphin-backs. Sometimes MENTU disappeared in front of me, while HUMMEL and MARSCHALL were glimpsed in the whirling snow. They were both afoot, for it was too cold for riding.

»HOTEL LARSON»

Behind a hill we came suddenly upon a lovely sight: »Hotel LARSON», an inn in the middle of the desert! My splendid caravan-leader advanced to meet us in his huge red Mongol sheepskin coat. »Welcome! and 'Happy New Year!'» he shouted cheerfully. He had built a little hut of packing-cases, with a storm-porch to keep drift-snow from the entrance. The interior had a floor-space of 2.3×2.1 meters;

the walls were covered with camel-felts, while a roof of the same material rested upon saddle poles. Under a square smoke-hole a fire blazed in its *tolok* of iron. Tea-kettles were already boiling, while mutton was sizzling in the pan. Five Swedes, one German and two Mongols, TSERAT and MATE LAMA, now took their places round the blaze, and we guests did full justice to the meal, hungry and frozen as we were.

This, then, was the place where the big caravan had suffered 'shipwreck' after four days of storm; and it was from here that it had proceeded on its way to Hami with 102 camels, thirty of which bore riders and indispensable luggage, in charge of HEYDER and SIU PING-CH'ANG. About a hundred chests were left behind with LARSON and his two Mongols. For the rest, the little colony comprised only four tired camels and three half-wild Chinese dogs with bells round their necks, which served to scare off over-daring wolves. Unfortunately, however, they also frightened away the argali-sheep and the shy wild asses that now and again strayed within convenient hunting distance of the camp.

»Well, what kind of Christmas did you have, LARSON?»

»Splendid; but I had lost count of the days, so I didn't know which day was Christmas Eve.»

On the 12th we bade farewell to LARSON and journeyed on to the west between black, bare-swept hills thrusting up from the white expanse of snow. Behind us rose the conical head of Tsaghan-tologoi, while a nameless chain with three beetling cliffs dominated the forward view. To the W. N. W. one could distinguish the Qarliq-tagh like a blue wall crowned with eternal snow. And our procession moved slowly forward over quartz-gravel and crunching snow.

Crash! my sedan-chair had lurched heavily to the ground on the left side! One of the loops had been frayed through by the continual friction. Happily, the camels did not bolt. I was slightly jarred, but that was all. The damage was quickly repaired and we continued on our way while the sun sank towards the horizon.

IMPORTANT LETTERS FROM OUR ADVANCE-PARTIES

At some distance we saw an unusual spectacle. Near a number of browsing camels a column of smoke rose from a tent at the foot of a hill. Was it a merchant caravan or some of our own men? When we reached the spot our Mongol SARAN GEREL and three hired Chinese rushed up to my sedan-chair and gave me greeting. They had been sent with fifty camels to LARSON's aid. They were pleased at this unexpected meeting and at the assurance that they had only twenty-two kilometers left to their destination.

Saran Gerel handed me a packet of letters. They were from members of my staff, and contained fateful news! We had been caught between the millstones of Chinese domestic politics. Would they grind us to pieces? Were we going to lose everything?

I give below a brief account of the contents of the letters I received from the columns that first reached the frontier of Sinkiang.

WALZ's REPORT

On November 25th Walz wrote from Hami that he and his two servants had traversed the desert between the Edsen-gol and Sinkiang by night-marches, often over pathless tracts or without water. One camel had died and another had been left behind in a village near Hami. When on November 11th he arrived at the frontier of Sinkiang he was surrounded by twenty mounted frontier-guards, who loaded their rifles in his presence in order to inspire due respect. Despite energetic protests he was detained for six days as a prisoner. In the meantime an officer arrived on the scene, accompanied by two squadrons of cavalry, four standard-bearers and four trumpeters.

Finally, he received permission to proceed to Hami under escort. The party took a short cut, skirting the foot of the mountain (Qarliq-tagh). The way led through ice and snow, and the going was difficult for the camels. One dark night three of them and one rider slipped down a steep, but without injury. When on November 21st he reached Hami he had covered 733 kilometers.

In Hami he was taken to a house at whose door two officers and twenty soldiers were keeping guard. The following day he was visited by Brigadier-General Liu, who came to cross-examine him.

»I must make my way as quickly as possible to Urumchi to execute important commissions, and I am provided with passport and license to bear arms», explained Walz.

»You must wait here until I receive instructions from Urumchi», replied the general.

Major Walz was then disarmed and the whole of his baggage examined. Everything was unpacked, and a thorough search instituted for gold and opium. A metal chest belonging to Lieberenz, and containing films, was broken open, as no key was available. Nothing was damaged, however. The young postmaster Chen, who spoke English, acted as interpreter. Day followed day, and a lively correspondence sprang up between Walz and Liu. Finally, the general gave Walz permission to set out on November 27th for the capital; not, however, on horseback, but in a cart and under mounted escort.

MÜHLENWEG's report announced that he and his two companions, after all sorts of difficulties, had travelled so far south as to pass one of HEMPEL-HAUDE-HASLUND's camping-sites. On the 9th of December they passed a ruin by the wayside, near which were a crowd of strange men. LAO CHANG assured the others that these armed men were soldiers, but BANCHE had his doubts. The leader of the group ostentatiously loaded his rifle and demanded to see MÜHLENWEG's passport.

»Let's see your own first!» retorted MÜHLENWEG.

»I do not need any passport, but here is the visiting-card of my superior.»

»Well, here are my passport and my license to bear arms.»

»If you intend to proceed westwards you must hand over your weapons to us; otherwise you must turn round and go back the way you came.»

By this time the whole band had mounted and surrounded the speakers.

»We are bound for Sinkiang, and we don't mean to let ourselves be held up,» said MÜHLENWEG.

»Very well; but then you must first hand over your weapons.»

When this had been done, the whole company moved off westwards, pitching camp late that evening. In reply to the question as to whether any other Europeans had passed by in that tract the leader answered: »Yes, first one and then five men, who have now all been taken prisoner.»

The next day they followed the Hami road for a while, but left it to strike off in another direction. MÜHLENWEG and his men found the situation uncomfortable. The soldiers were not wearing proper uniforms and looked more like a band of ruffians.

That evening a halt was called in the darkness before a grotto near a spring. The chief of the band, who was supposed to live here, was, however, not at home. He had evidently set out for Hsing-hsing-hsia on the Anhsi road, explained the men; and MÜHLENWEG must now follow them thither. But he obstinately refused to travel in any other direction than towards Hami. The fellows then declared their willingness to send a messenger after their chief, and pending his arrival both MÜHLENWEG and his two servants were to consider themselves as prisoners at the grotto, at the mouth of which they were given permission to set up their tent.

Inside the grotto MÜHLENWEG saw only riding-saddles, and he therefore doubted that his mysterious hosts were robbers. BANCHE insisted fearfully that they had fallen into the clutches of bandits, but LAO CHANG was convinced that they were really soldiers. That night MÜHLENWEG woke up suddenly to find BANCHE on his knees, gabbling lamaistic prayers. When asked what was the matter, the Mongol answered that they were in the hands of a band of robbers and would certainly lose their lives. The man who had been despatched to fetch their chief had returned alone after half an hour, showing this manoeuvre to have been merely a piece of shadow-fencing. The robbers wished only to entice MÜHLENWEG and his men still farther into the desert, in order to be able to rob and kill them without risk of disturbance.

The following day they set off again with their captives. Towards evening the band rode on ahead to make a fire and pitch camp. Only the leader, who was also mounted on camel-back, accompanied our people. Mühlenweg felt strongly tempted to fling himself at the man, snatch his gun out of his hands, and fly. But just at that moment Lao Chang drew their attention to a caravan to the right of their route.

»I wish to know what sort of caravan that is,» declared Mühlenweg to the Chinese leader. »It may be one of our own parties.» The man had nothing to object, and straightway set off at a good pace in the direction of the caravan. Lao Chang continued in the track of the band, but Mühlenweg stayed with Banche. It was beginning to get dark.

»Now is our chance,» he said to his Mongol. »They *are* robbers; we must get away to-night. It's now or never. The darkness is in our favour. We must hurry northwards and then turn sharp west.»

»Let's sacrifice the camels,» suggested Banche; »otherwise they'll see our tracks. And anyway the camels would have hard going in the mountains.

»Good, then we'll leave the camels here. If the men are robbers they'll steal the animals — if they're soldiers then we shall get them back.»

Banche had a piece of fat with him, which was all they had in the way of provisions. Mühlenweg took half his travelling money, a matter of 350 silver dollars, which was as much as he could conveniently carry. The other half was left in a saddle-bag on one of the camels. Leaving their animals to go on browsing, they set off on foot, and found themselves presently in a valley among the hills. Where the ground consisted of soft dust or sand Banche dragged his sheepskin coat behind him to obliterate their tracks.

So they went on through half the night, becoming at last so tired that they flung themselves down to rest as they were, not daring to light a fire lest they betray their whereabouts to their probable pursuers. The following day they walked until four o'clock, when they were worn out and had to rest. The piece of fat was now consumed, being washed down with ice-water near a spring. After another spell of walking they slept between eleven and one o'clock in the morning when they woke up with chattering teeth and were obliged to set off again on account of the cold. The following day they found good drinking water, but had nothing to eat. They made a little fire to warm themselves. Then on again on their wild flight. On December 12th they walked all day and all night. At dawn they heard the plashing of a brook, on the bank of which they made up a fire. Afterwards they poured sand over the glowing coals, thus getting a warm 'bed' to sleep on. Two hours later Banche woke his master and said: »To-day we shall see heaven. I hear a cock crowing.»

They set off immediately, coming presently to a simple house inhabited by an old Chinese. There they ate their fill and drank tea, afterwards buying flour, meat and an ass. The same afternoon they started out on the main road to Hami.

An hour later they met two Mongol soldiers. After putting a lot of questions the latter rode off at full speed, returning in ten minutes with a whole troop, whose leader embarked upon a fresh cross-examination. MÜHLENWEG and BANCHE were now taken to a courtyard where there were several yurts, soldiers and horses. The commandant lived in a mud dwelling, on the »k'ang» of which they now sat down to talk. He had heard that two foreign prisoners had escaped, and now understood that they had been recaptured. They would, however, be given back their camels the following day. But neither on the 14th nor on the 15th was anything more heard about the camels. It had been rumoured that a huge caravan of Europeans was approaching, and that late that autumn twelve hundred men had been quartered in eighty tents on the Edsen-gol. He now wished to know whether we belonged to FENG YÜ-HSIANG's army. The whole of eastern Sinkiang had been mobilized on our account.

On the 16th MÜHLENWEG spoke out: »If I don't get my camels to-morrow, and if you don't lend us two horses, we shall set off on foot for Hami.» They were given horses. At the village I-k'o-shu they fell in with WALZ's Mongol TSERCHI, and on the 18th they continued on their way to Hami, where General LIU subjected them to another cross-examination. On the 22nd LAO CHANG arrived with the two camels he had been left in charge of.

MÜHLENWEG promptly set about organizing relief for us, a task which he performed with admirable energy and address.

HASLUND's LETTER

From HASLUND, who had acted as HEMPEL's and HAUDE's caravan-leader, I received a letter written in Hami on December 18th. At the village Miao-erh-ku the column had been taken prisoner by Mongol and Mohammedan soldiers, who disarmed them and detained them for eleven days. In the course of their march through the desert they had lost three of their twenty-four camels, which shows how well HASLUND had managed as caravan leader. That they were not welcome in Hami was made more than evident. His request to be allowed to hasten eastwards to my column was not granted.

HAUDE's REPORT

The next document is Dr HAUDE's detailed report on the journey through The Black Gobi from October 31st to November 27th, when they reached Miao-erh-ku and were detained, strongly guarded. On the 3rd of December they counted 800 mounted men, and this troop was later further reinforced. The following day the party received a message from Governor Yang to the effect that he did not wish the expedition to come to Sinkiang. He had already telegraphed to Peking, saying that he did not want to see the expedition in his province.[1]

Hempel, Haude and Haslund, who also had Kaull, Dettmann and Li in their column, therefore drew up the following telegram in English to Governor Yang:

»We have to-day been informed that the members of Dr Sven Hedin's scientific expedition have not obtained Your Excellency's permission to cross the frontier of Sinkiang, and that you request our return to Peking. In reply we wish to inform Your Excellency that our return across the desert is impossible for the following reasons: Our expedition left Peking without sufficient winter equipment, as we had intended to procure this in Sinkiang. Since, moreover, the journey here has taken much longer than we anticipated, all our provisions and the whole of the rest of our equipment have been used up, and we have not the wherewithal for a return at this time of the year. All our money is in Urumchi, or was to have been sent there from Peking after our arrival. A large number of our camels have been lost in the desert, and those we have left are so worn out that they are not in a fit state to make a desert journey of more than a few days. We have been told that we are suspected of being Communists. We deny this most emphatically, and would remind Your Excellency of the fact that the Swedish and the German Legations in Peking have given guarantees to His Excellency Marshal Chang Tso-lin that none of us intends to engage in politics of any sort, and that none of us is a Communist. We beg Your Excellency to take the above into consideration, and to allow us to continue our journey to Hami. We take advantage of the opportunity of expressing our profound respect for Your Excellency.»

On December 6th the leader of the column, Major Hempel, received a favourable reply from Governor Yang, who gave his permission for the entire staff of the expedition to continue to Hami on the following three conditions: forfeiture of arms, investigation of baggage, leaving behind of all servants and camels at the frontier.

On December 9th the column started for Hami, reaching this town after a three days' journey. On their arrival they immediately handed over all their weapons and the baggage was thoroughly examined. Not until the end of the month did the members of the column receive a part of the moneys we had deposited in Urumchi from Peking. On December 29th they set off for Urumchi in three carts.

We read all these letters carefully and conferred for several hours on this threatening situation. What I found not least annoying in all this was that the whole of our mail from May to September had been sent to Peking to be censored, since there was no one in Urumchi who could read Swedish. (This important mail did not come into our hands until the end of March 1928.)

It was, however, already evident that the hostile attitude towards us was beginning to undergo a revision. So, for example, Marschall had been well received by the troops he met at the frontier, who had hastened to supply the sedan-

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[1] In October Governor Yang had got into touch with the Ministry of Education in Peking, with which he had exchanged detailed telegrams about the expedition. On this occasion, as on so many others, our envoyé, O. Ewerlöf, intervened skilfully and energetically on our behalf.

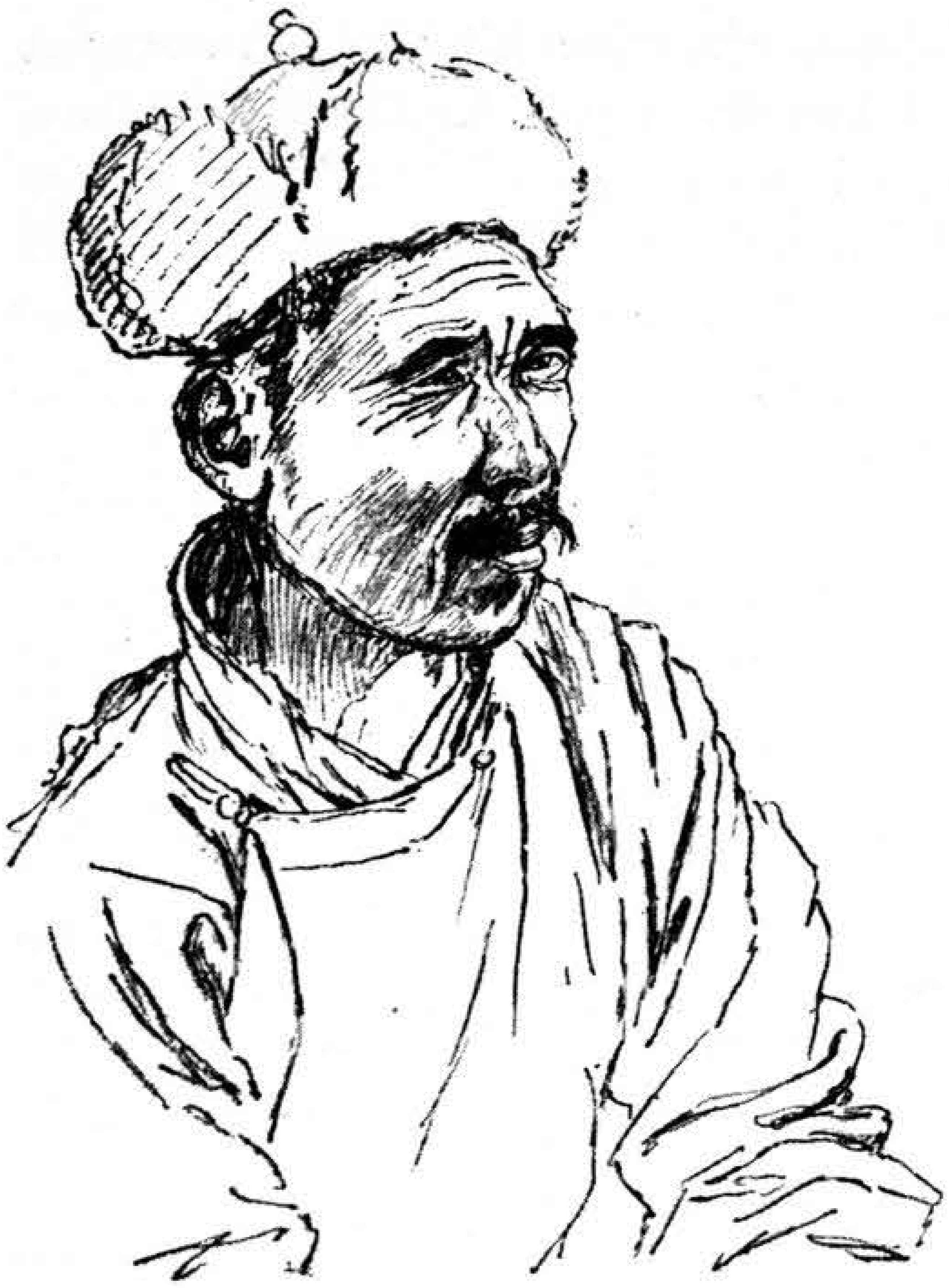


Fig. 25. Yaltsang, a lama from Alakshan who served as guide for Norin's column

chair, the camels and provisions he had asked for. But then again MARSCHALL had a wonderful way with him. He would eat, drink and joke with people in a way that made them consider him as one of themselves. He treated also the natives like human beings, was polite and friendly to them and never tried to bludgeon them into doing what he wished.

We resumed our westward journey. The temperature had been as low as —21°.7 C. The landscape was monotonous, and completely dominated by Qarliq-tagh. On the 13th we covered 23.5 kilometers and on the 14th eleven kilometers.

We ought now soon to fall in with frontier patrols from Sinkiang. We set a south-westerly course in order to reach the road that on STEIN's map is marked between Ming-shui and Barkul. In the course of the day we also crossed this route. We saw fifty wild asses browsing in three herds by the wayside, a splendid spectacle! On this day we managed twenty-one kilometers.

On the 16th it began to snow; and soon the ground was everywhere quite white. The flakes even came whirling into my sedan-chair, so that I, too, received an extra white covering. The 17th of January was a brilliant day with glittering snow-crystals on the wintry landscape. The plain to the west seemed to be endless.

Majestically beautiful in pink and violet shades, the Qarliq-tagh, now entirely snow-covered, loomed nearer and nearer. On the morning of the 18th we saw it in N. 22° W. Snow-filled wheel-tracks left by a passing cart bore witness to the presence of human beings. Here, too, were small cairns as sign-posts.

THE FIRST SETTLEMENT IN SINKIANG

On January 19th our long spell of solitude was broken. On reaching a stream that flowed along in a three-meter-deep erosion bed we saw, beyond a projecting promontory in the west, an oasis of willows and Lombardy poplars. We proceeded up the valley, following the stream, and presently passed a little temple on our left. On the dark hills near the route throned a *mazar* or grave of a Mohammedan saint with conical cupola and a wall. Grass and wild rose-bushes, yellow mud houses, enclosing walls. Here, near a little grove of willows, we pitched camp, after a march of thirty-three li. The Chinese name of this place was Miao-erh-ku. Not one of the two hundred soldiers who were stationed here at the time of MARSCHALL's visit, was now left. Only a few Chinese agriculturists and three Turks inhabited the spot. One of the latter, seventy-two year old KHODAYER, was the head of the nearby village Tal and owned half the camels that had saved LARSON's baggage. He had heard that we were an army of two thousand men. It was a pleasure for me to hear Turki, that I had not used for nineteen years.

Here a sheep cost five dollars, and thirty partridges four. We got fine wheat-bread, eggs, onions and cabbages, and after two months and ten days in the desert it seemed to us that we had reached civilization at last.

Towards evening LARSON arrived at the head of the fifty hired camels. Late that night we heard the clank of bells from the west. It was a caravan of a thousand camels and twenty-five tents, on the way to Pao-t'ou. The embargo on traffic had thus been raised.

We stayed over a day in the shadow of Khojam Yagus, the saint's tomb, and were visited by one Captain CHANG, the officer in command of the troops that were to keep an eye on us and our doings. He informed us that YUAN and his column, who had been missing for so long, had passed this place a week previously, a happy piece of news, that relieved us of a great anxiety.

The owners of the hired camels now wanted their beasts back again, and we were therefore obliged to continue our journey in carts. But CHANG explained that everything on wheels had been requisitioned on account of the Chinese New Year which was now impending. While he was still holding forth the Mongol officer TSAI entered my yurt, and he procured us a cart and four horses in a twinkling. LARSON was allowed to keep the hired camels, and that evening he set out in advance with the heavy baggage. We handed over our rifles and pistols to the two officers, and these, together with our carefully counted ammunition, were stowed in a packing-case which was then sealed and taken along.

FROM MIAO-ERH-KU TO HAMI BY CART

We were now to experience a new mode of transit, HUMMEL, BERGMAN and myself taking our places in TSAI's broad cart (*araba*), a vehicle with two high wheels. HUMMEL had lined the equipage with the yurt-felts, our sleeping-bags and rugs, and we were as snug as could be wished. One horse went between the shafts while the three others were harnessed with ropes in front, going abreast. Reins were not used. The driver directed his team with cries, such as *wah, wah, ee, ee,* and the horses understood him. Occasionally he used his whip. If the animals bolted it would not matter. The steppe extended far enough and the cart would remain intact.

Bathing in the sunlight, the mighty Qarliq-tagh throned to the right, and in the west appeared new portions of its continuation, the Barkul-tagh. The plain to the south of this alpine wall seemed infinite, and over it led our route to the west.

We passed an old watch-tower and made contact with the telegraph line between Tash-bulaq and Hami. At the spring Ch'eng-ch'üan-tze, where we pitched camp, a Chinese caravan was resting. At sunset it started off to the east. LARSON passed us with his hired camels.

Long stretches of the desert were absolutely sterile. Winding over its hard, dark surface the road looked like a broad, bright band. At the village Huang-lu-kang, where we encamped, our route joined the big caravan road from Anhsi to Hami.

On January 23rd was New Year's Day for the Chinese, so in the morning we received ceremonious visits from all the servants and from the oldest inhabitant of Huang-lu-kang. The wooden pillars in front of the booths lining the main street were ornamented with the usual red placards, but the booths themselves were closed.

On the outskirts of the village we passed LARSON's camp and several of the Mongols who had gone on ahead of us. At some distance to the south-west our camels from all three columns were peacefully browsing. There were in all 138.

IX. IN HAMI

THE RECEPTION

To the east of Miao-erh-ku we had already crossed the frontier into Sinkiang. Now we were approaching the first town in the territory of this immense province. We were met by a dark troop of horsemen, covered in dust. In front was a fat and authoritative *bek*, who now rode alongside our cart and discussed with us conditions in Hami. Presently we entered an avenue of ancient, gnarled willows, flanked by canals. We were soon driving along streets between yellow-grey walls and over bridges with carved balustrades. We rolled in through the double town-gates of the Chinese town and soon arrived at the *yamen* of the commandant. In an outer courtyard we were received by Brigadier-General LIU's guard. In the barely furnished reception-room several officials, the burgomaster, and the mighty YOLBARS KHAN were all waiting.

While tea was being served General LIU made his appearance, pale and thin and with all the marks of an inveterate opium-smoker. As interpreter we had the English-speaking postmaster CHEN, a friendly and polite little man. LIU asked us questions about our journey and our hardships, the routes we had taken and the camels we had lost, about my illness in the desert and a number of other matters. In reply to my question as to when we might continue to Urumchi he answered that we could set off whenever we liked. I had hoped to be allowed to send NORIN and BERGMAN direct to Lop-nor, but LIU regretted that only Governor-General YANG could decide this, adding that he would immediately send off a telegram about the matter. He told me that he was acquainted with my former journeys, and assured me that I should find travelling in Sinkiang much safer now than then.

Presently, he began to speak of YANG's three conditions for our journey in Sinkiang, namely, the giving up of our weapons, examination of our baggage, and discharging of our Mongols. He apologized for these measures, explaining that for the past three years a state of war had been declared in the province. I reassured LIU by informing him that our Mongols would in any case have been sent home, as they were foreigners here and did not understand the language. Our baggage was to be unloaded in the courtyard of the yamen.

We had not far to go to the house that had been placed at our disposal, where we met all our companions. In the gate-house stood the soldiers who had been told off to guard us. None of us was allowed to go about in the town without being accompanied by a couple of armed guards.

Professor SIU told us that at least a part of the misunderstanding that had arisen had been due to an unfortunately or else mischievously worded letter from a student in Peking to our student LI. He had written: »I congratulate you on the two hundred fighting men you have in your caravan.» Presumably he had only wished to say that we were numerous and well-armed against attack. This letter was read, however, by the authorities in Urumchi, with the consequence that *all* letters, both to the Chinese and to the Europeans in the expedition, were sent to Peking for censorship. After investigating the matter the censor had probably informed the authorities in Sinkiang that our mail contained nothing suspect, and the mail from August till November had accordingly been kept at Urumchi, whence it was now being sent to Hami. On the very first evening, in fact, postmaster CHEN handed over a couple of hundred more than welcome letters to me.

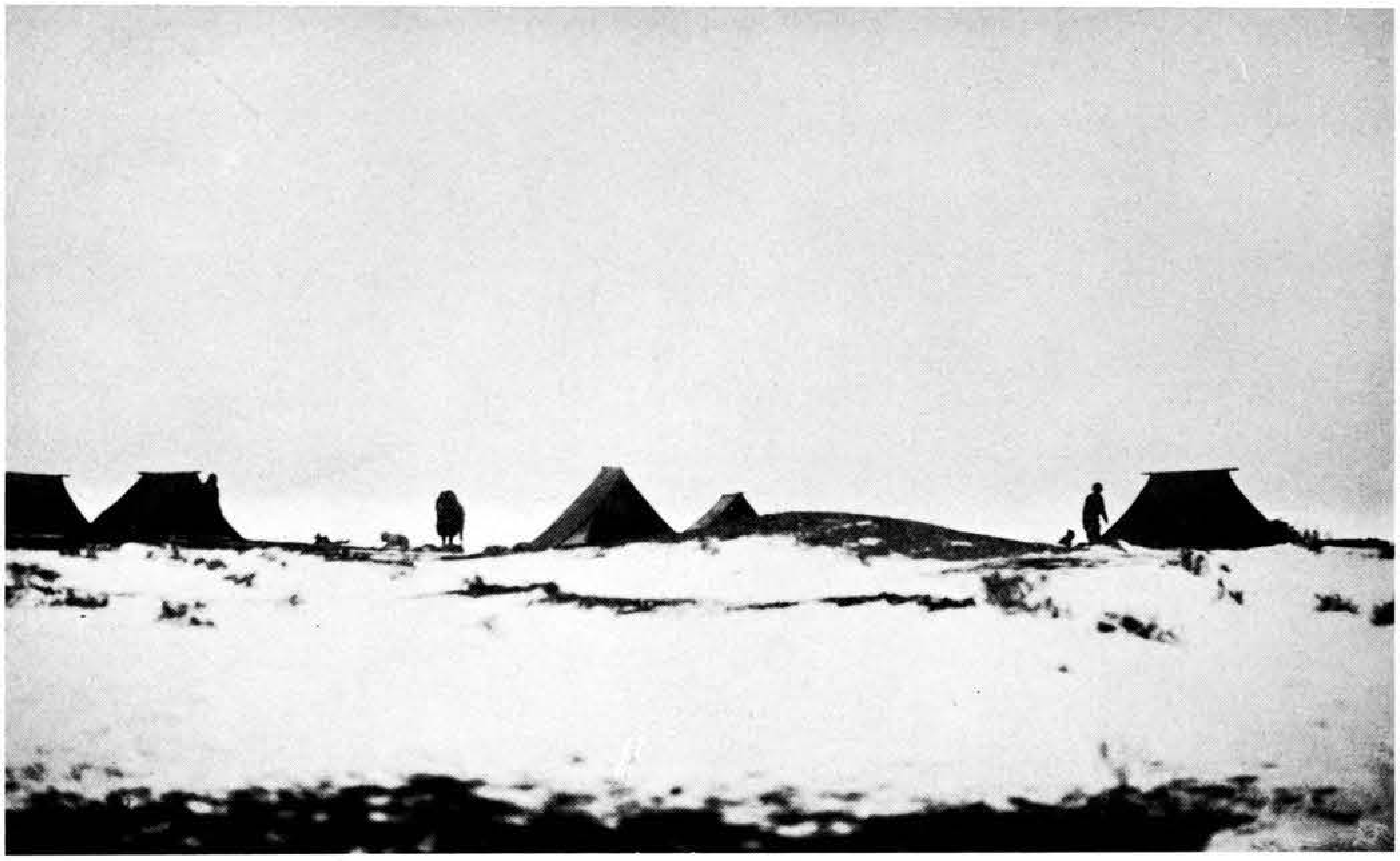
On the very first day I had a feeling that our situation was already brighter. True, we were still guarded like prisoners, but we were treated with consideration. Another cause for anxiety, however, lay in a telegram from Suchow, sent by the student MA, one of the three who were left in charge of the meteorological station on the Edsen-gol: »Station No. 1 has been forbidden by the authorities in Kansu. We have been ordered to leave the province. We have no money.»

Professor SIU sent a telegram and wrote detailed letters to the civil and military authorities in Suchow. We arranged for a remittance to be sent to MA and for the rest — were obliged to await developments.

Professor YUAN, whom I now saw after six months' separation, had in the meantime made a bold and fruitful desert-journey from the tract of Tukhumin-sume to the Chen-fan region in Kansu, and from there in a north-westerly direction to the Edsen-gol, where he had visited the station. In the desert outside Chen-fan he had discovered three ancient ruined towns. He had all his men and camels safe and sound, and had performed the journey with incredible cheapness.

During our stay in Hami our relations with the authorities improved steadily. The main baggage was unpacked and examined in LIU's presence. Among other things, a huge portrait of CHANG TSO-LIN, signed and dedicated by himself, was unpacked from one of my chests. This made a visible and deep impression on the general.

A Chinese caravan-leader, who was going to return to Kuei-hua in a day or so with a large number of unloaded camels, was engaged to answer for the return of



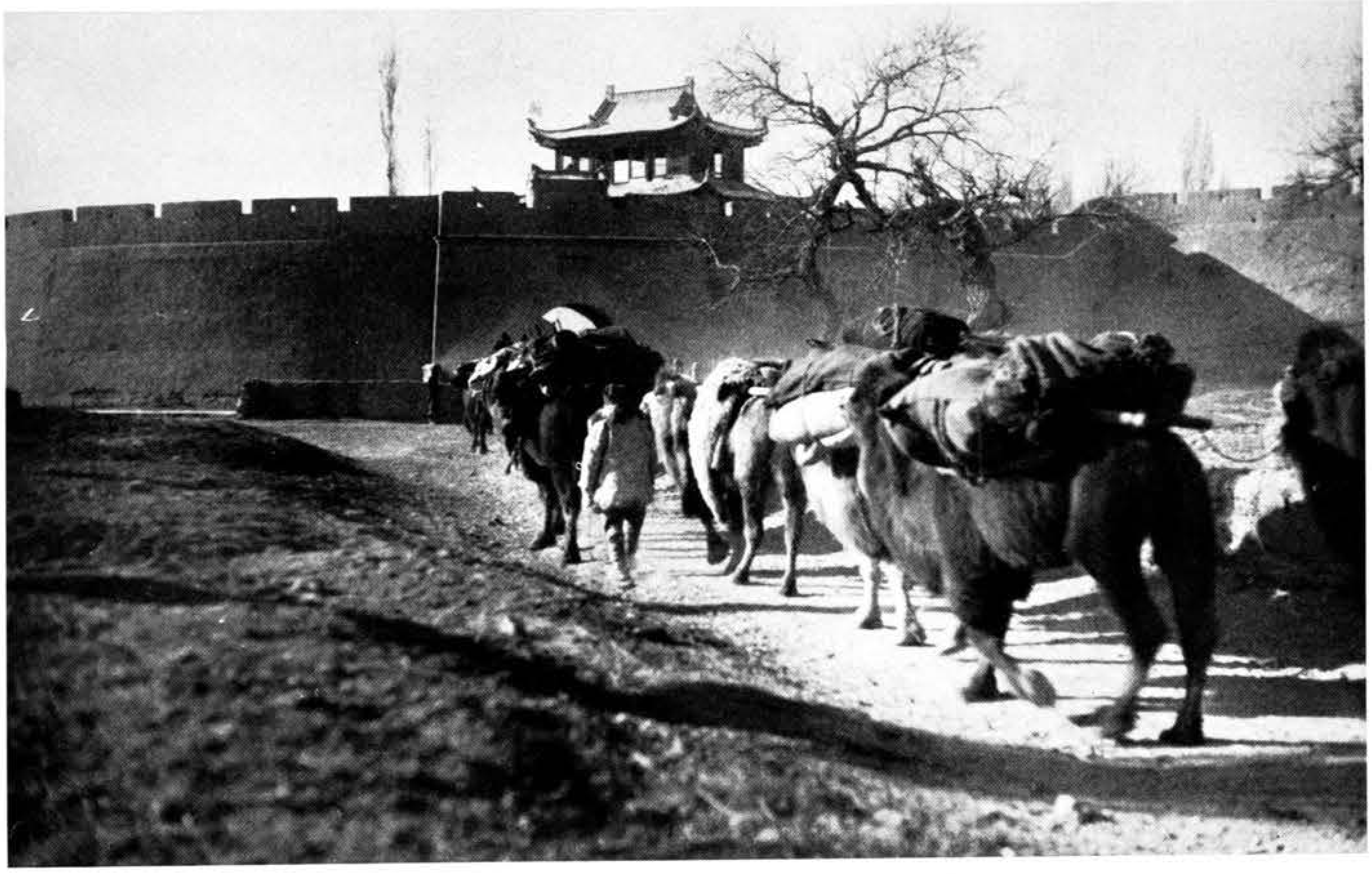
Winter camp in the Gobi, December 28th

Lieberenz Photo

Reaching the foot-hills of the eastern Qarliq-tagh

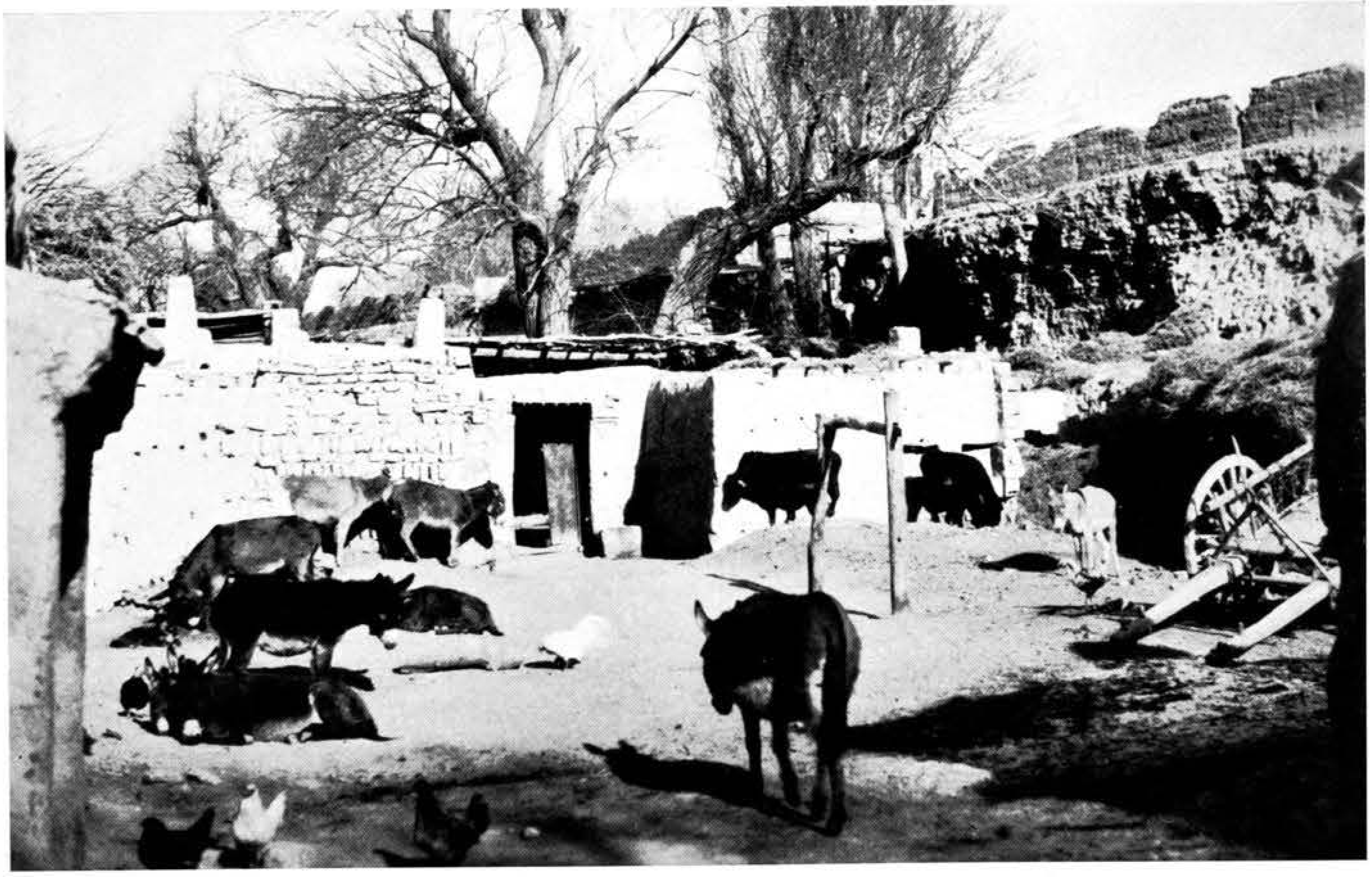
Lieberenz Photo

PLATE 40



Our caravan reaching the city-gate of Hami

Lieberenz Photo



A yard inside the walls of Hami

Lieberenz Photo

our twenty-one Mongols to their home-tract in Chakhar. In addition to the wages already due to him, which were to be paid out in Kalgan, each Mongol was to receive ninety dollars, a sufficient supply of flour, tea and mutton as well as two hired camels. They were also to take five hundred dollars to ZIMMERMANN and his comrades. However, the Mongols' journey was postponed, as thirty of the caravan-owner's camels were requisitioned for twelve days' transport-service for the military. No merchant caravan is allowed to journey to the east without such a levy. But with the help of the authorities we were able to get better conditions.

I sent off a telegram informing Governor YANG of the arrival of the last column in Hami, thanked him for his hospitality and kindly interest in us and expressed my pleasure at the prospect of soon making his personal acquaintance. I also asked permission for NORIN and BERGMAN to go direct to Lop-nor. In his reply he bade us welcome to Sinkiang. As regards the Lop-nor expeditions, the question was to be settled in Urumchi. It was clear that the governor himself wished to see us before any further steps were taken.

THE MOHAMMEDAN KING

When Professor SIU and I went visiting we were escorted by six soldiers in sheep-skin coats. We went along dusty streets and lanes, between walls, trees and canals to the residence of the Mohammedan king, a palace that combines a blend of Mohammedan and Chinese architectural style and is surrounded by a high mud wall. One enters a spacious hall with rugs, tables and rows of red-upholstered chairs. On the walls hang four huge placards, on which one recognizes the symbols of bliss and of long life. These had been given to the king by the empress dowager on the occasion of his four visits to Peking.

We had scarcely been ushered into a small reception-room before the prince, SHAH MAQSUD, or as he was called by the Chinese, SHA CHING WANG, entered and greeted us most courteously. He was a rather corpulent little man of seventy, with a rubicund complexion, friendly eyes, aquiline nose and snow-white beard. He wore Chinese dress. His dynasty had had Hami as its capital ever since the sixteenth year of K'ANG-HSI (1677). His power was more illusory than real, and strictly speaking he was no more than tolerated by the Chinese. Also in Lukchun, where his son-in-law resided, and in Kucha there were similar Mohammedan »shadow-princes». The taxes he levied upon the faithful were said to be heavier than those imposed by the Chinese, and he was therefore supposed to be unpopular among the followers of Islam.

His first question referred to Professor VON LE COQ of Berlin, celebrated on account of his epoch-making expeditions to the Turfan tract and other old Buddhist centres in Sinkiang. »Well, I should think I do know LE COQ! He is one of my best friends,» I replied; whereupon the prince spoke of his own memories from the beginning of the century, when LE COQ had also visited Hami, and asked me to convey his greetings to him.

His notions as to Sweden's position on the map were, naturally, of the vaguest. »How far is your country from Istanbul?» — »Four days' journey by train.» — »Oh, so you are neighbours of the Turks!» — He himself took three months to reach Peking. He proceeded to question us about our journey through Asia, and was unable to understand why we had taken eight months over it, since the average merchant caravan did it in three. I explained that we had worked, made observations and collections, and asked him why people had been afraid of us and suspected us of evil intentions. He replied:

»When so many well-armed Europeans come to our frontiers it is no matter for surprise that we suspect them of being the advance-guard of a hostile army. China is in a state of war, and we must be careful. But we were not afraid of you, especially as we knew that the son of your king had spoken well of you and recommended you to the government in Peking. Yet we had no means of knowing whether you were the right ones or quite a different party. Now, however, everything is clear.»

We took our farewell of the prince and proceeded to the next visit. This was to General LIU, who invited the whole staff to a dinner at which he himself, the magistrate and SHAH MAQSUD were to act as hosts. The dinner was to be held in YOLBARS KHAN's residence, the only spacious house in Hami, and moreover, the only one to which the king could go without running the risk of being served food that had been prepared in pork-dripping.

Finally we paid a visit to the burgomaster, General AH, and to the postmaster CHEN.

On his return visit General LIU presented me with a beautiful panther-skin from Kucha, in acknowledgement of the gift he had himself received. This was our largest telescope with tripod, a present that had delighted him very much.

FALCON HUNT

One day the Mohammedan king had invited us to witness a hunt with falcons. Accordingly, some of our hunters rode out with the hunting party. They were very satisfied with what they saw — the bag for the day consisted of three hares. These hunting falcons are caught in the autumn. Decoyed by doves or fowls under stretched out nets, the falcon is lured into the trap, gets entangled in the meshes and is fast. He is tamed in a fortnight, taught to perch on the leather gauntlet, to wear a hood over his head, and to catch foxes and hares. He is restored to liberty among the mountains. When autumn approaches a fresh set of falcons is caught, and it may happen that on this occasion birds who have already served for a spell are lured into the net again.

CEREMONIAL DINNERS

January 30th was the date fixed for the dinner in YOLBARS KHAN's house. YOLBARS KHAN, or the »Tiger Prince», was the right hand man of the Mohammedan king, and was also on a good footing with the Chinese authorities.[1] He was of great use to us, helping us to manage our affairs, taking charge of our camels, procuring us provisions and carts for the journey to Urumchi, and was, in a word, our all in all. Needless to say, he did nothing gratis, but that is another story. His house was built in the Turkish style and had intricate lattice-work in the windows and as balustrades. Over the courtyard extended a balcony or verandah from the upper storey, and up to this led an open stairway.

We were met with military music and soldiers presenting arms. In the big room on the upper storey waited our hosts, a couple of whom at first showed us round the house. Roses were blooming in the winter-garden, while pelargonia and oleanders added a magnificent splash of colour. From the verandah facing the street one had a good view of both the Turki town and the wall-surrounded Chinese town, while to the north loomed the T'ien-shan with its dazzlingly white snowfields and glaciers.

The dinner, which was Chinese throughout, was served at three round tables in the big room.

With shark's fins, bamboo-shoots, sea-algae and other wonderful delicacies that had been transported all the way from China's coast, the king persuaded us to drink hot Chinese brandy. As a faithful follower of the Koran he himself did not drink, but he insisted that one would feel only beneficial effects from as much of the stuff as one could manage to swallow.[2]

The dinner was a success — a curious, colourful meal over which hovered something of a mediaeval air.

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[1] According to later information he was actually half-Chinese. F. B.

[2] He was evidently speaking from his own experience. Readers of Asiatic travel-books with a memory for details may perhaps recollect VON LE COQ's description in »Auf Hellas Spuren in Ost-Turkistan» of a dinner with French champagne and innumerable Russian liqueurs given by the same potentate in the year 1905. On this occasion SHAH MAQSUD was continually drinking to the health of his guests, and seemed to be completely impervious to any effects from the consumption of alcohol. Evidently he could drink these foreign wines with a quiet conscience, without transgressing the commandments of the Koran. They were probably considered as something quite other than the wine forbidden by the Koran, and in this he was undoubtedly perfectly right. On the other hand, however, he could not drink the wine of his own country, that was served at the dinner given to us. F. B.

The very next day we gave our return-dinner. It was in all respects like the foregoing, except that yesterday's hosts were now the guests while the guests of the previous day were now the hosts. The meal also differed in another detail in that the thirty-eight year old Mongol prince, SENGTSEN GEGEN[1] of the Qara-shahr Torgut tribe, was now among the guests. (As a matter of fact it was the nephew of this dignitary that was the prince of the Qara-shahr Torguts, but the Gegen was representing the real prince, a youth of fifteen called BICHIGEN KHAN, pending the latter's majority.) SENGTSEN GEGEN was the commander of the troops that were despatched to the eastern frontier of Sinkiang to protect the province against the army of invasion that the rumour alleged our expedition to be. He gave us to understand that he dreamed of owning a rifle with telescope-sights, and when on the following day he came on a visit to us, driving in a Russian droshky and escorted by his Torgut body-guard on yellow horses, he was presented with Major HEYDER's rifle — we having first been granted gracious permission to unpack the latter from the sealed rifle-chest. In return he gave Professor SIU and myself a bear-skin apiece.

During the third dinner in YOLBARS KHAN's house the officers' corps in Hami acted the part of hosts, and the same persons were present as on the second day.

All kinds of provisions were sent to our quarters, such as rice and mutton, as well as quantities of the big, delicious Hami melons, which are probably the finest in the world.

THE TOWN

Hami[2] has its China-town and its Turki-town, its Mohammedan bazaars and Chinese booths, its mosques and its temples. A frontier garrison is stationed there, and it is the head-quarters of several generals. The Hami district was at that time counted as a war-zone, and during the civil war between the different generals in China proper those responsible for Sinkiang's safety considered that the province might be made the object of an invasion from the east.

»Hami is famous for its melons, Turfan for its grapes, Kulja for its horses and

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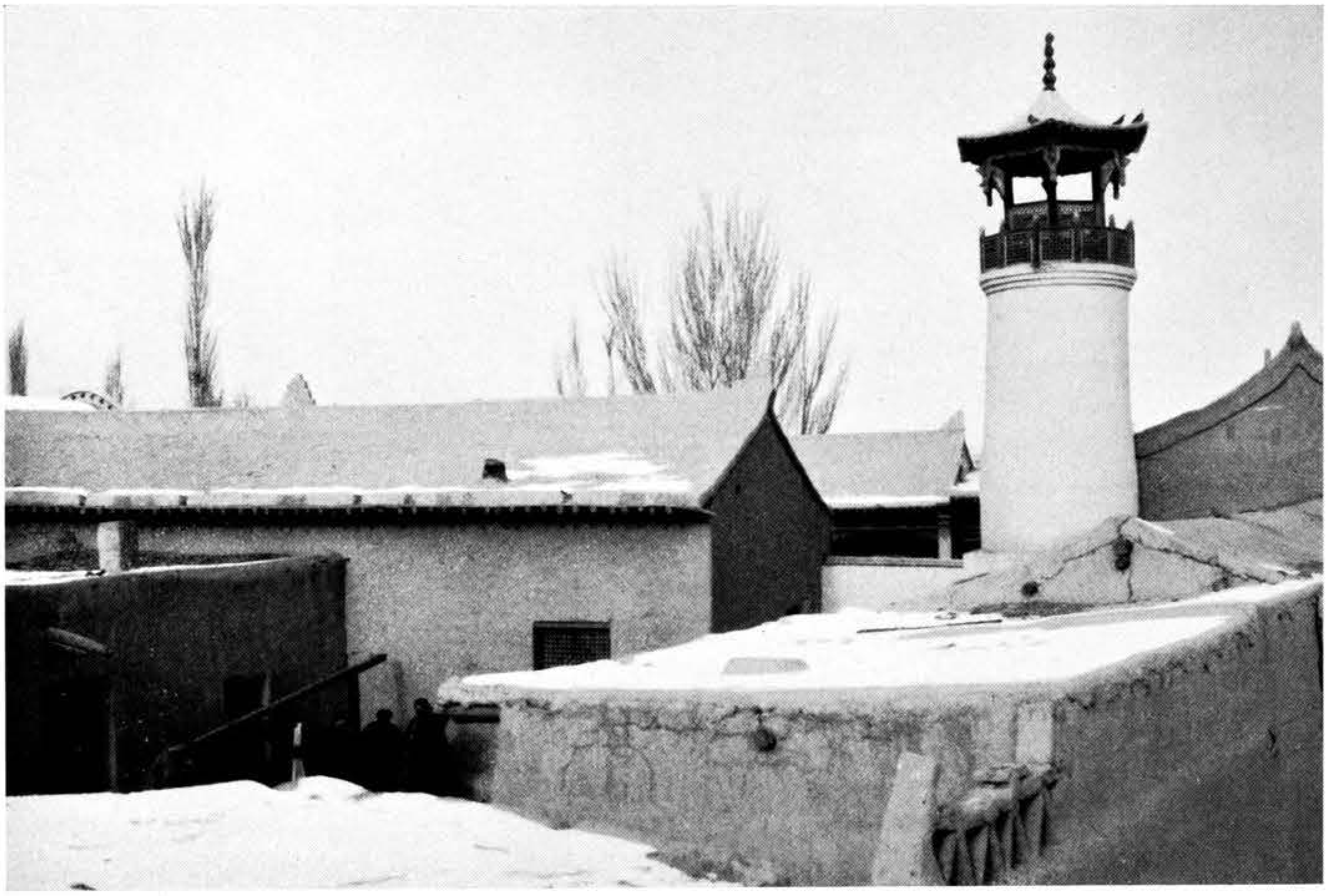
[1] In previous publications he has been called SINCHIN (SINTJIN, SENG-CHEN) GEGEN. This is his title as a lamaistic incarnation. According to the dedication written with his own hand on the photograph which serves as frontispiece to HASLUND's »Zajagan», and which Dr K. GRØNBECH has kindly transcribed, the proper rendering is SENGTSEN GEGEN. On this photograph his personal name is also given: TOBDAN TSERENTSÖMGIL. By his subordinates he was often referred to as TOIN LAMA, i. e. The Princely Lama. Apart from his exalted religious position he had been made a general by Governor-General YANG — a rather anomalous combination. He is well summed up in a passage in GEORGE N. ROERICH's »Trails to Inmost Asia», p. 105, referring to a visit to his residence in 1926. F. B.

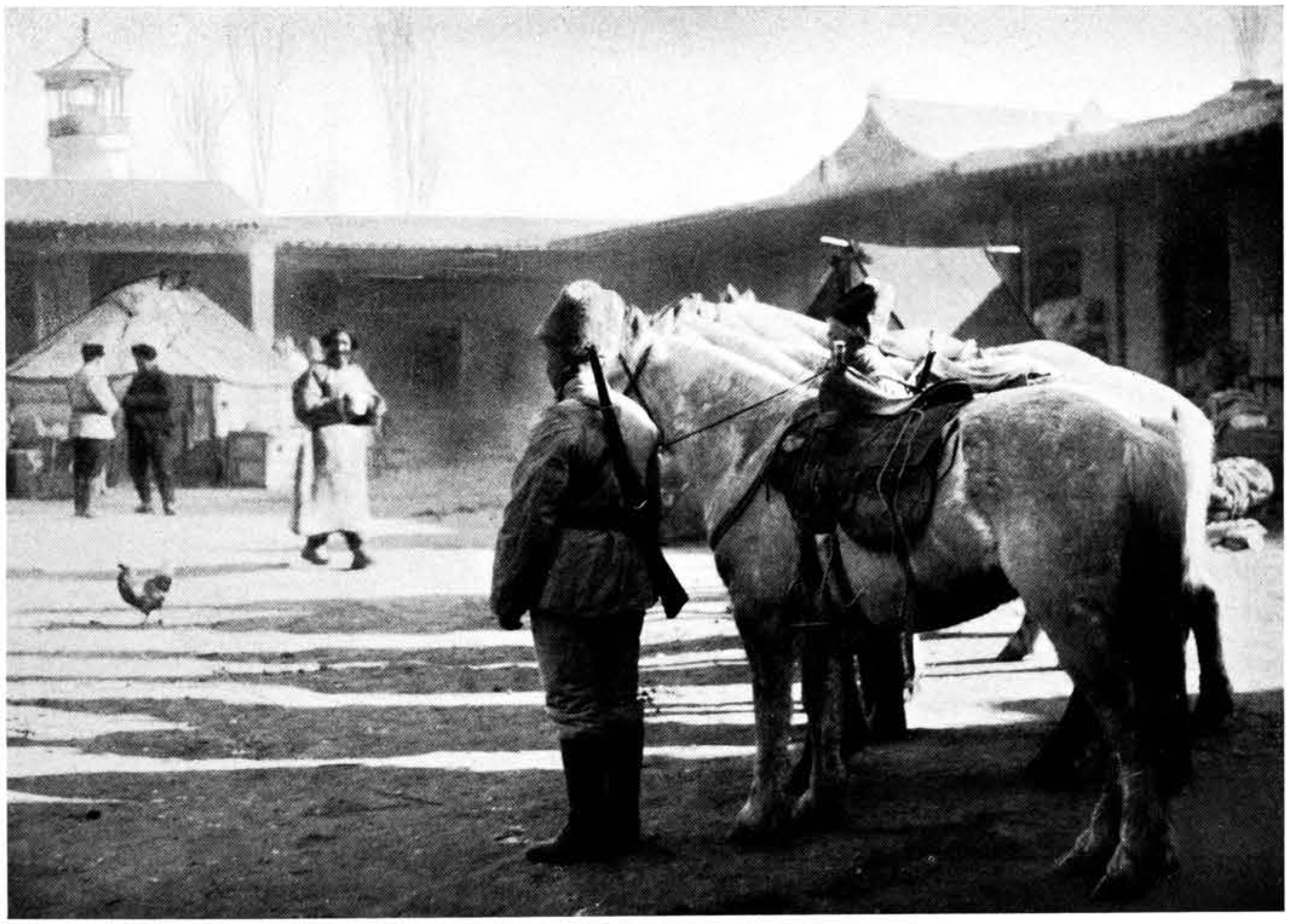
[2] As is well-known, the Turki name for Hami is Qomul. In some older works one finds the form Khamil, and I have met the opinion that this is the Mongols' name for the town — a statement that I have not been able to confirm. A Turki resident of Qomul is a Qomulluq.

Especially the Russians refer to the Turki town populations as Sarts. The Chinese name for all Turkis in Sinkiang is ch'an-t'ou = Turban Head. F. B.



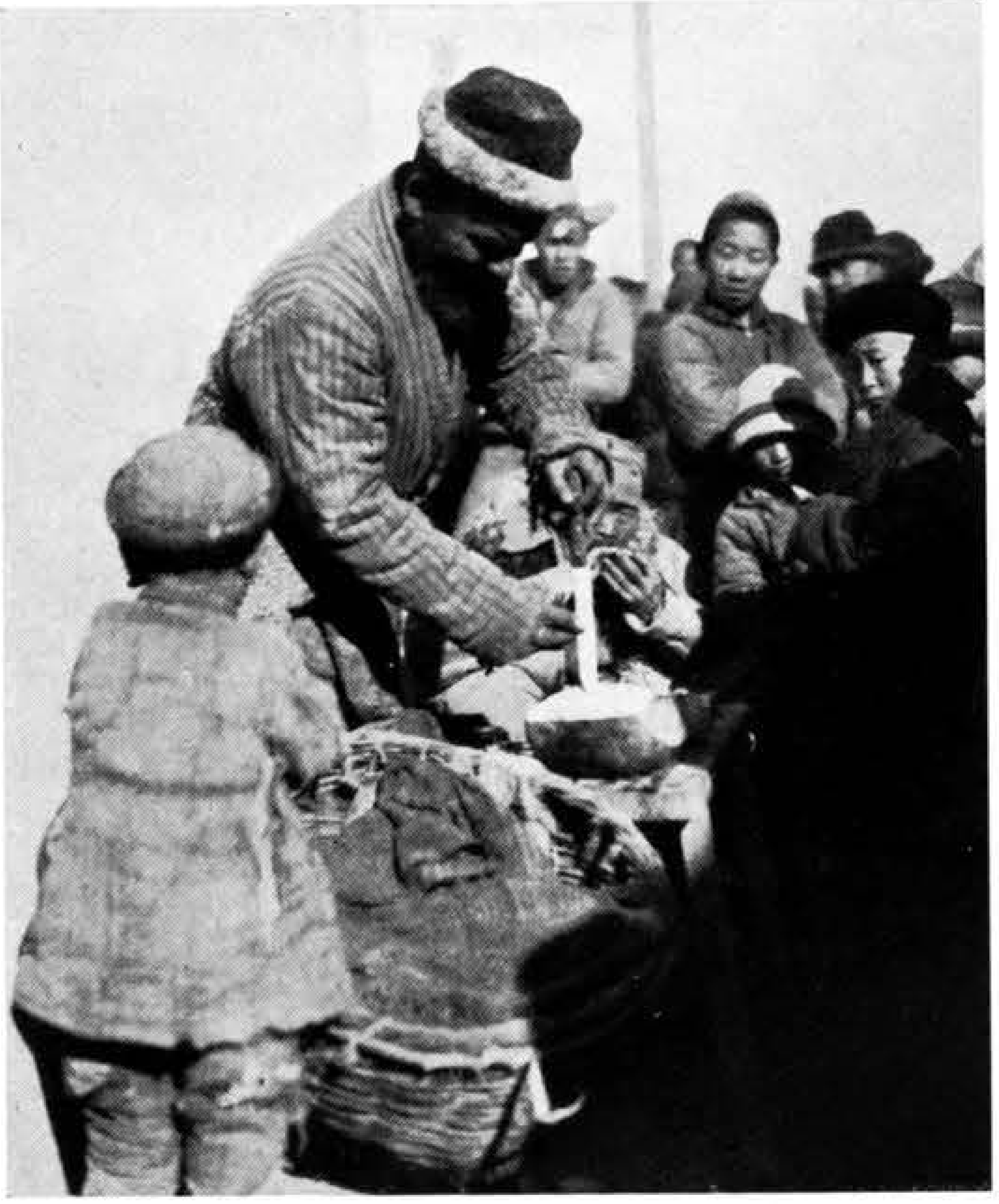
A minaret in Hami

Lieberenz Photo



Escort of the Sengtsen Gegen in our courtyard in Hami

Lieberenz Photo



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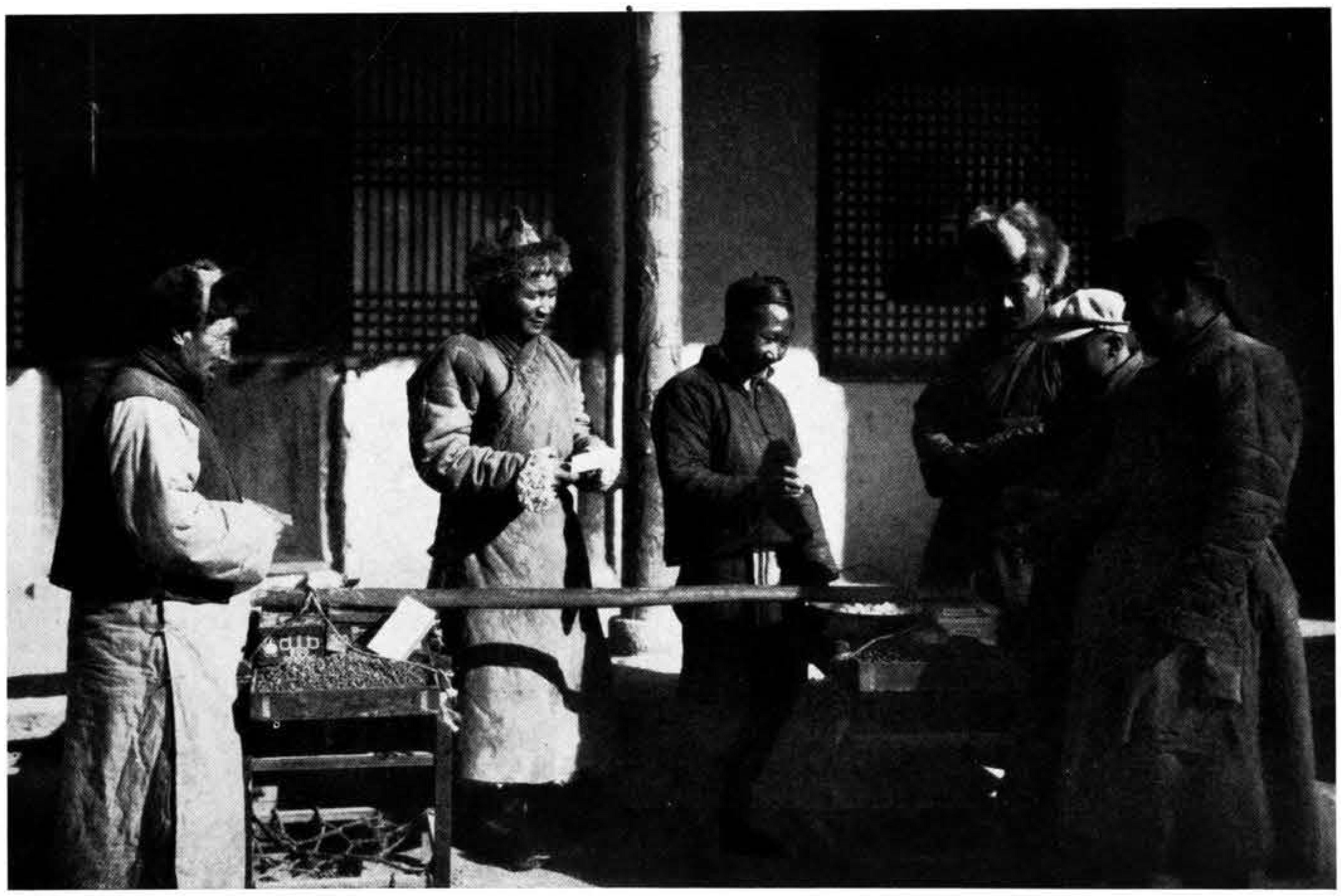
Slicing a Hami melon



Lieberenz Photo

Our Mongols making purchases in Hami. From the left: Mentu, Mate Lama, the Chinese dealer, Batu and Bongkh

Kucha for its girls» says a Chinese proverb in Sinkiang. And truly, the town of Hami is surrounded by an oasis of fields and fine gardens, where all sorts of fruits are cultivated. The irrigation-water comes from the Qarliq-tagh in the north. The great and ancient caravan road that on many maps is called »The Imperial Highway», and that is the main route between China proper and Sinkiang, goes through Hami.

TSO TSUNG-T'ANG's TEMPLE

There is in Hami a temple erected to the memory of Tso Tsung-t'ang. This general was instrumental in putting down the T'ai-p'ing revolt in the interior of China. After restoring order in Shansi he marched in 1877 to Sinkiang, that Li Hung-chang wished to sacrifice, put down the Mohammedan revolt that was raging there, and saved this vast territory for China. For this reason a temple has been erected in Hami to his honour. One goes through gates between red-lacquered columns and under curved roofs, to stop, after crossing two courtyards, before the façade of the temple, the middle part of which is taken up by a room resembling a miniature stage. In the middle of this room stands a kind of box with a picture, scarcely more than a foot in height, of the general clad in a yellow robe and mandarin-cap. He wears black moustaches and has a determined look. In front is an incense-burner. A tablet bears all his titles of honour, while at the sides there are other tablets on which are inscribed the names of his army leaders.

The name »Sinkiang» (properly Hsin-chiang) or »The New Dominion» was introduced after Tso Tsung-t'ang's pacification of the country. Formerly, these tracts were called Hsi-yü or The Western Region, and were divided into T'ien-shan Pei-lu and T'ien-shan Nan-lu, corresponding to Dzungaria and Kashgaria.

Another temple in Hami is erected to the god of the province of Hunan, for Tso Tsung-t'ang and most of his generals were from Hunan.

ALTUNLUQ-MAZAR

On the outskirts of the oasis is the burial-mosque under the cupola of which rest Shah Maqsud's grandfather and several other members of the dynasty.[1] It is a cubical building with simple glazed tiles, and its façade is ornamented with niches, all designed in straight lines and angles, not the round arches that are otherwise so common in Islamic architecture. Inside the mosque are a number of sarcophagi of plastered brick.

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[1] Field Marshal Mannerheim, who visited Hami in 1907, relates a fact about Shah Maqsud's ancestry of which we heard nothing. (He refers, by the way, to the prince as Shao Makhmut; but this must be due to a mishearing of the name, or is perhaps a misprint). Of the burial mosque he says that the last Mohammedan prince in the direct line rests there with his wives and children. But that the present prince has risen by the caprices of fate from a poor shepherd boy to a princely throne and wealth that should by rights not be his. He was brought up by the last ruler of the district, married his daughter and succeeded by means of bribes and intrigues in Peking in being recognized as the heir to the small principality. (Across Asia, p. 388). Douglas Carruthers, who was very kindly received by Shah Maqsud (Mahsud Shah) in 1911, says that this ruler was the eighth of his line (Unknown Mongolia, p. 487). F. B.

At the side of the mausoleum are two enormous prayer-halls whose roofs are supported on round wooden columns. Pulpits and prayer-niches all face Mecca.

By the waysides run *aryks* or irrigation canals, and here grow willows, Lombardy poplars and mulberry trees. One of these willows was peculiar. It proceeded from *one* root but divided into nine trunks, twisting and winding over the ground and built into a couple of small mud houses. They were called »The Nine Dragons».

THE CURRENCY

We came here into touch with Sinkiang's curious currency. The current medium of payment consists almost exclusively of notes, the »Sinkiang liang», which are printed in Urumchi and exist in only one value of *one* liang. The Chinese cash with square hole in the middle are also current, and occasionally one sees a *yambau*[1], i. e. a boat-shaped silver piece worth fifty liang. The Chinese silver dollars that are in circulation are sought after by merchants, for the paper money is not valid outside of the province. When we sold silver dollars we got only 2½ liang in paper, but if we bought dollars we had to pay 3½ liang.

For our Mongols, who were about to return to their homes, we needed two thousand silver dollars, which sum we finally got together with the help of YOLBARS KHAN at the high price of 3½ liang.

HUMMEL's PRACTICE

None of us had so much to do, during our stay in Hami, as Dr HUMMEL. All day sick people were coming in for treatment and medicine. The postmaster's little daughter underwent a successful operation. He also visited many of the patients in their homes, as for instance SHAH MAQSUD's son, the burgomaster, General LIU and others. The latter asked him for a remedy that might cure him of opium-smoking.

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[1] Corruption of the Chinese *yuan-pao*. F. B.

THE PARTING FROM OUR MONGOLS

On the evening of February 2nd our Mongols took leave of us. I thanked them for faithful service and wished them a happy journey. They had played their parts in our expedition, and were now about to leave the scene for good. They returned to their camp outside the town, but did not start on their journey home until the 12th. As ANDREWS has related in his »New Conquest of Central Asia», they fell in with his expedition somewhere to the west of Beli-miao.[1]

Several of them had previously served under ANDREWS and we shall meet many of them again in the following parts of this work.

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[1] More precisely at the brook which ANDREWS calls Hei Ne Ho, i. e. the Khonin-chaghan-chölo-gol. F. B.

X. THE JOURNEY FROM HAMI TO URUMCHI

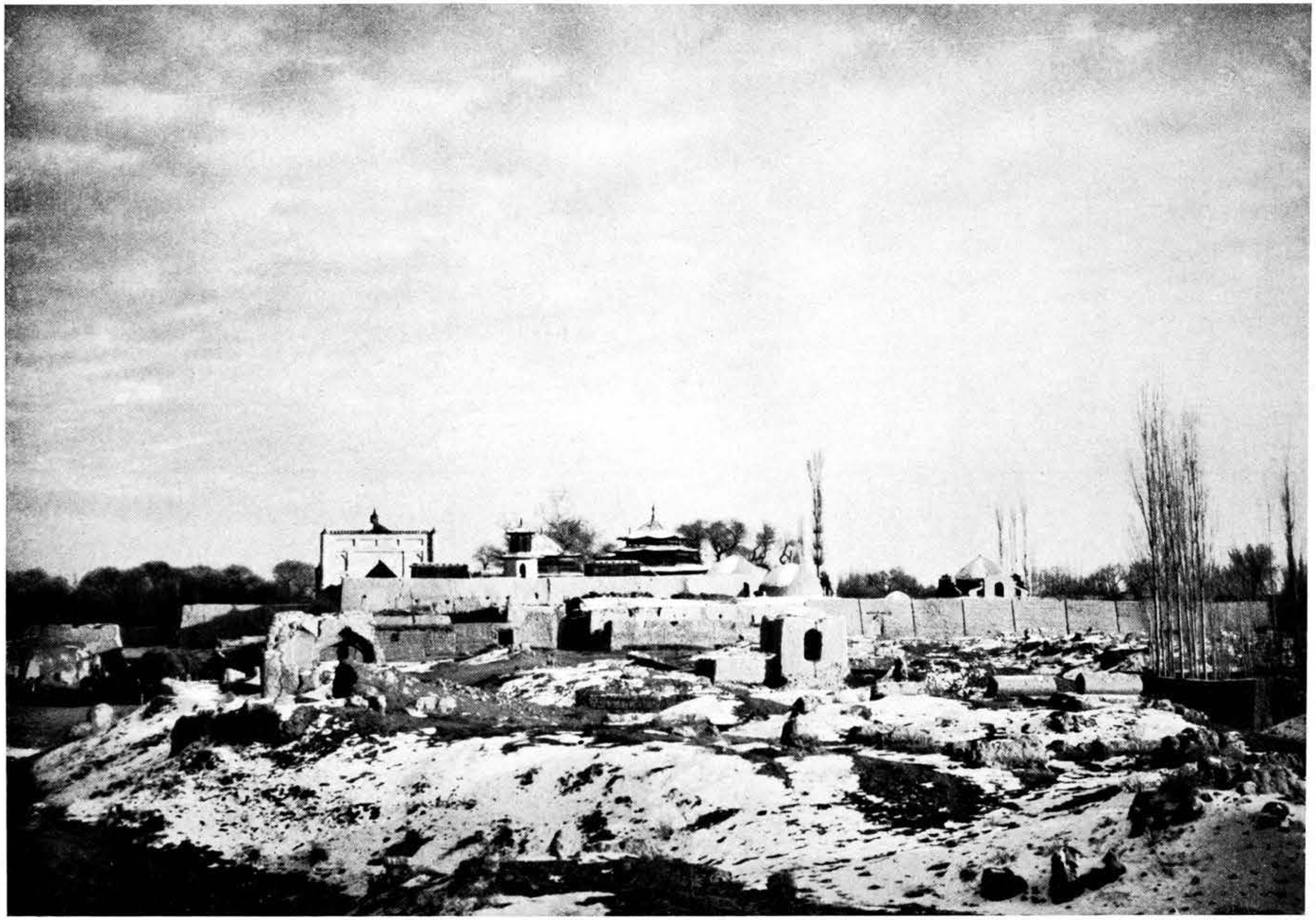
At last the day for our start arrived. On February 4th the courtyard presented a scene of picturesque disorder, with eight big carts with high wheels, chests, trunks, provision-boxes, sacks and all the goods we were taking with us. When I was informed that we should be followed by an escort the whole way I asked if they took us for robbers, seeing they surrounded us with so many soldiers. »No, by no means. They are a guard of honour, and only very illustrious persons are worthy of such a distinction.»

Messengers came and went, and our newly acquired friends, both Chinese and Turks, sent us farewell gifts such as mutton, live fowls, eggs, pastries, sweets, raisins and melons. In the midst of this chaos SHAH MAQSUD arrived in his little covered European carriage on a farewell visit. He had heard speak of a kind of telescope with which one could see right through the mightiest mountains, and discover hidden treasures there. He believed, of course, that we had such a treasure-finder, and was naturally anxious to possess one himself. It was impossible to shake his belief in the existence of such an instrument.

We travelled in two parties, in order not to be too crowded in the little caravanserais along the route. Accordingly, LARSON, MARSCHALL, MASSENBACH, MÜHLENWEG, YUAN, HUANG, CHAN, LIU and KUNG were to start a week later with the heavy baggage.

Not until four o'clock in the afternoon did we get started. The long line of heavily loaded carts, each drawn by four horses, was a picturesque sight. So had man travelled centuries, indeed, perhaps thousands of years, ago. SIU and I had a roof of straw mats over our carts. We sat comfortably ensconced on hay, blankets, sleeping-bags and furs. It was as well, for the road was miserable. One was in fact so thrown about that a weak stomach might have become sea-sick. Three large bronze bells fixed to the axle-tree clanged dully as we progressed. The Mongol escort added colour to the picture. The soldiers wore khaki-coloured uniforms of European cut, had enormous light-brown sheepskin caps and were mounted on good ponies. The dust whirled. Slowly and heavily we advanced.

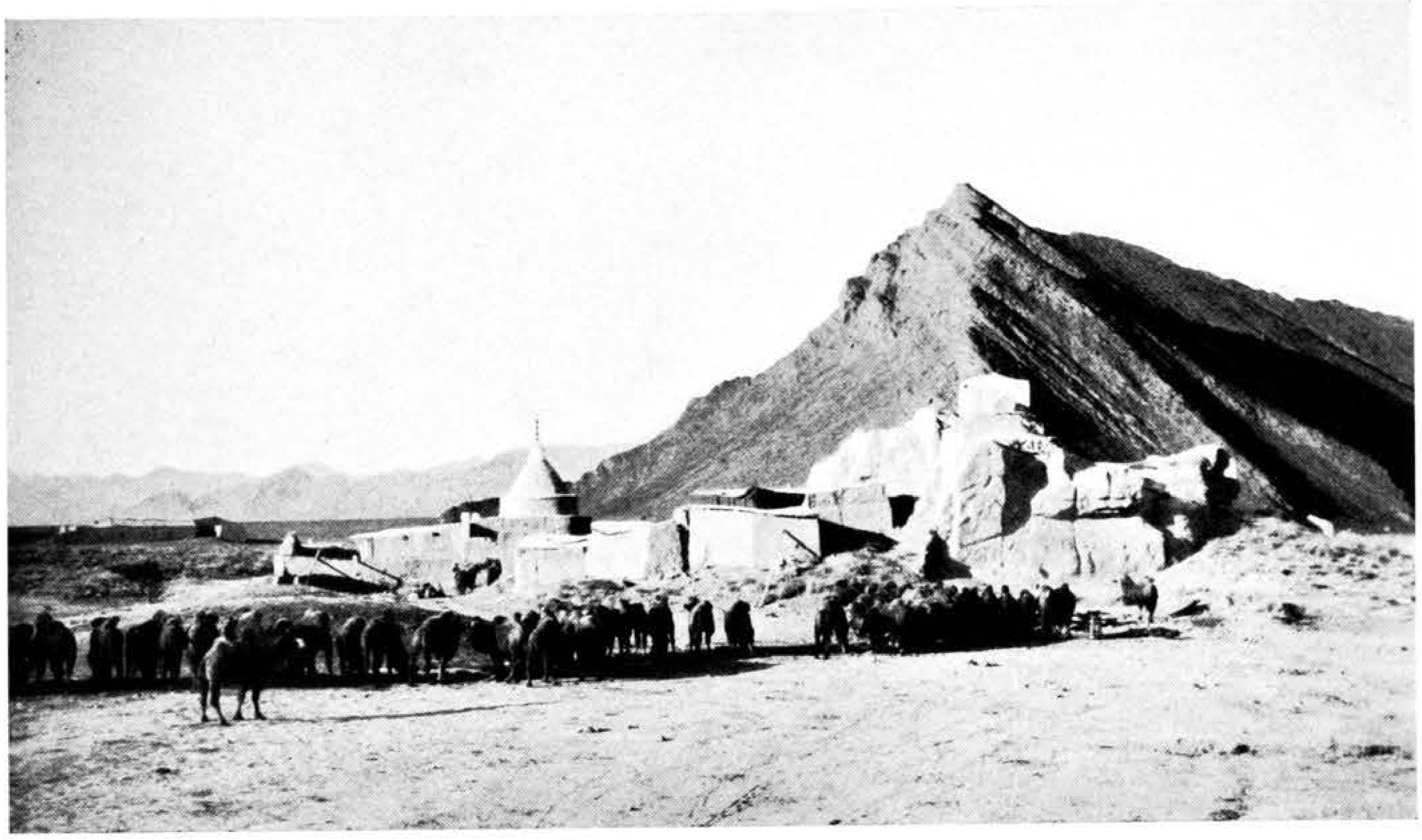
By nine o'clock we were out in the desert again; the still atmosphere of the



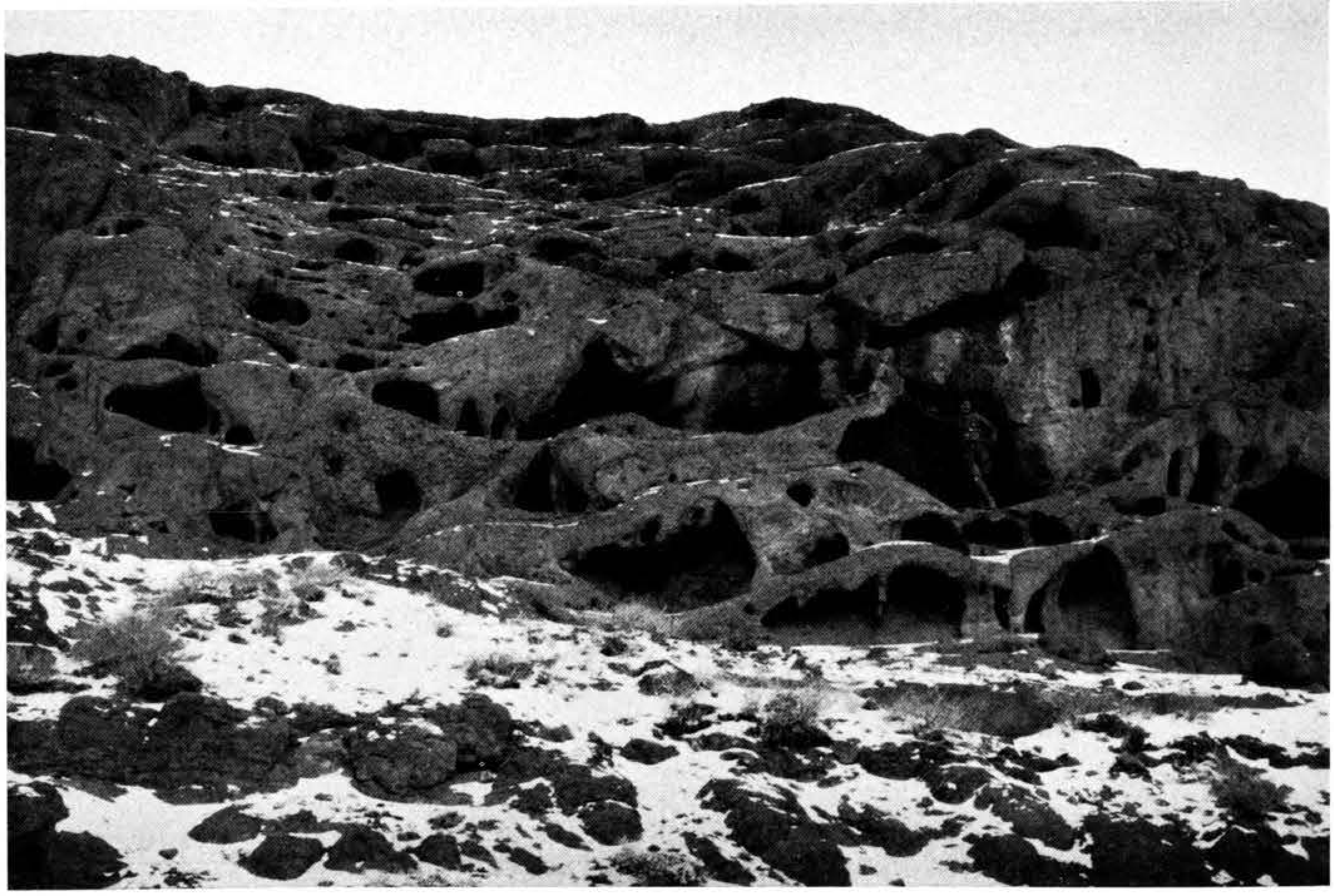
Altunluq-mazar, the grave-yard of the kings of Qomul

Lieberenz Photo

PLATE 44



The *mazar* at Tung-yen-chih in the T'ien-shan *Lieberenz Photo*



A »cascade» of once molten stone at Toquz-davan in the T'ien-shan *Lieberenz Photo* wilderness surrounded us on all sides. Now and then, however, one met small caravans of asses, mules or horses and carts, most of them loaded with cotton. But as we were now travelling on a trunk road this was to be expected; to the east of Sinkiang we had used the desert-paths of the caravans.

At three o'clock on the morning of February 5th we drove into the village T'ou-p'u, stopping outside a well-built house where the Mongol prince had had his temporary headquarters. Here, in a large room, a table groaned under an array of dishes with sweets, butter, bread, eggs, jam and honey. After this we were served meat-broth with vegetables, spaghetti, *pilmén* (minced meat surrounded with dough) and other good things. Nor was brandy wanting. It was a quarter to seven before we got to sleep!

On setting off again at one o'clock in the afternoon we had an escort of fifteen Mongol horsemen. The route led across steppe-country, and the wheel-ruts in the soft ground were sometimes as much as a foot in depth. We met a caravan of one hundred and seventy-five camels, loaded with enormous white bales of cotton. At the village Astani or Erh-p'u the landscape changed to desert again, continuing so all the way to the village San-p'u, where we spent the night in three miserable little hovels. About half the floor-surface in each room was taken up with a two foot high platform of mud (*k'ang*), in part hollow, so that it might be heated from below for the benefit of those who slept thereon. Before the *k'ang* was an altar-like elevation for the open fire, which filled the room with stifling smoke. We had our own food with us, and NORIN's cook WANG prepared the meal.

During the course of the following day we travelled mostly through desert. On a couple of occasions, however, we passed gardens; and we saw those curious subterranean canals called *karez* that at a depth of a couple of fathoms or more convey irrigation-water from springs near the mountains to the north to villages in the south, situated beyond our field of vision. The presence of a *karez* is betrayed by the mouths of the vertical shafts that at intervals of twenty to thirty meters lead down to the canals like airways.

In the village Taranchi, where we spent the night of February 7th, lived four families, two Chinese, one Tungan and one Turki. To the north rose the snow-clad tops of the T'ien-shan, while before them extended the hard, black gravel surface of the desert, now and then showing small erosion-beds with a sparse growth of tussocks. The western horizon disappeared in haze. The landscape was monotonous, but impressive in its majestic grandeur and solitude. In the evening we stopped for a couple of hours at the little village Ördekliq, where the horses were given maize while we partook of a simple meal in a ruin. Later that night we rested in the village Liao-tun.

ADIL AHUN, the foreman of our *arabakesh* (drivers), came every evening to my room for instructions, and to give me particulars about the next day's journey. Our drivers received fifteen liang (about nine Swedish crowns) a month in wages from their employer YOLBARS KHAN, in addition to which they were given two chin of flour and ten chin of fuel a day.

In Liao-tun we stopped over for a day (February 8th) to rest the horses. A courier caught us up with mail: illustrated papers and books but no letters.

INTO THE T'IEN-SHAN

Through the tract called Toquz-davan or »The Nine Passes» our route led into the T'ien-shan — now meandering and crooked, now straight over small ridges with steep slopes, through red defiles and past stone cairns.

Our night accomodation in I-wan-ch'üan was provided by a caravanserai of the simplest kind. But the murky little rooms had holes in the roof for the passage of smoke, a peep-hole in the clay walls and a door-opening without door. For the rest, the village consisted of only two homesteads.

The following morning there was a north-west wind, and the sky was covered with clouds. The wind whined round the carts and the dust whirled up behind horses and wheels. A fair distance ahead of our party rode the Mongolian escort. Crossing a couple of rather steep passes we presently found ourselves surrounded by sterile hills. We called a halt in a narrow valley at Ch'e-k'o-lu-ch'üan or »Cart-wheel Spring» with its ruined huts. In the evenings one of us read aloud from v. LE COQ's masterly work »Auf Hellas Spuren in Ost-Turkistan».

February 11th. In dazzling morning light and with beautiful *chiaroscuro* effects in the valley we continued our downward journey in the winding, sometimes scarce twenty meter broad valley-bottom. The slopes on either side formed hills of from forty to fifty meters in height. The valley widened out into a kettle-shaped plain in the T'ien-shan. Approximately in the middle of the plain lies the village Ch'i-chio-ching-tze, where we called a halt. Here was a telegraph station and here, too, a branching of the route: the right arm continuing over Ku-ch'eng-tze to Urumchi and the left arm going over Turfan.

The next day we had a distance of forty-nine kilometers to cover, and the following day fifty-three. We were therefore roused at half-past two in the morning, but we went on sleeping in the carts.

At nine o'clock we woke up as the party came to a halt at Tung-yen-chih, »East Salt Marsh». There was the grave of a Tungan saint, a little building with a conical cupola and a temple in Chinese style with sacrificed horns of argali and ibex. On the walls inside hung red cloths with Chinese inscriptions, and the grave, shaped like a sarcophagus, was covered with white cloth. Our drivers performed devotions at this Mohammedan holy tomb. They poured oil on the altar-lamps and ignited it.

For a long time we had heavy going over gently rising gravel country up to a narrow and picturesque valley. Here, in the evening, the horses received their usual half way meal of maize. The tract was completely sterile. A discarded telegraph pole, however, provided us with fuel, and we got water from a couple of snow-drifts lying in a crevice. Over the fire we cooked pease soup and made tea, which cheered our drooping spirits.

As we advanced, the valley became narrower; and at nine o'clock that evening we drove over a pass, according to the barometer 1,160 meters above sea-level. If this was correct it meant that we had climbed nine hundred meters from Ch'i-chio-ching-tze during the twenty hours since setting out from there. We camped late at night, in the little hamlet Hsi-yen-chih, surrounded by the wild cliffs of the T'ien-shan.

In the afternoon of February 13th we continued our journey towards the setting sun, with wild mountain scenery on either side, stopping the following morning in T'u-tun-tze to rest the horses. We were now well out of the T'ien-shan range. On over open ground we went, till we reached the little fortress Chiqtam. According to the barometer we had descended 500 meters over this stretch.

PICHAN

Outside the village of Chiqtam the carts suddenly sank to the axles in an ice-covered canal that had overflowed its banks. One of the carts stuck so fast that it took eight horses to get it free again.

Red sandstone hills rise around the depression where in the village Bir-bulaq (»*One* Spring») three Mohammedan families cultivate wheat, maize and melons. We passed a *mazar* or holy grave, and presently also the ruins of a watch-tower. Farther on we noticed that we were approaching a town. A large caravan was coming towards us, loaded with cotton for Kuei-hua. We saw also carts and little donkey-caravans, and against the sinking sun were outlined the silhouettes of gardens and tall poplars. We were drawing near to Pichan's oasis. The road now entered an avenue of willows, poplars and mulberry-trees, horsemen and peasants on foot began to emerge from the clouds of dust, and on either side of the road were rattling along a bazaar-street, partly covered with straw mats and lined with booths and tea-houses, merchants and customers. A bridge led us over a deep canal, on the yonder side of which was a cemetery. And finally came another bazaar-street, in which was also the inn where we were to stop. ADIL AHUN asked for a rest-day, as we had lost one horse and needed four fresh ones.

Pichan has four gates and a main street between the northern and the southern one. Three hundred families are said to inhabit the town, a great part of them Chinese and Tungans. The inhabitants of the surrounding countryside are almost exclusively Turkis. Here in the town reside a burgomaster and three officers, but no other officials.

The Chinese now call the district of Pichan Shan-shan. Shan-shan was a kingdom in the Tarim basin that was founded in 77 B. C. It probably never stretched as far to the north-east as Pichan, however, and the revival of the name with its present application is therefore a mistake.

The member of the party who had most to do in this our hundredth camp, reckoned from Pao-t'ou, was HUMMEL. A crowd of invalids was already assembled in the courtyard on the morning of February 16th. There were cases of leprosy, consumption in its last stages, trachoma and other horrible complaints. HUMMEL helped them as far as time and circumstances permitted.

After an hour's journey on the following day we were once more travelling over a completely sterile desert. On our left hand was an isolated collection of dunes called Qum-tagh or »The Sand Hills», while on our right appeared some small oases from which water sometimes reached the road along which we were driving. We passed Lamjin with its picturesque village street; this village is situated on the bank of a little stream.

RUINS OF A VANISHED CULTURE

Towards evening, on February 18th, our carts rolled into Sengim's dusty but romantically wild valley, through which flowed a fairly full stream. The bed had been eroded down at least twenty-five meters, and had vertical banks. Sometimes the road ran along the very edge of the bank, and one sat wondering whether it would hold under the weight of the carts, or whether we should be hurled into the stream below. A little wooden bridge went over the watercourse where the road led up a side-valley to the Bezeklik caves, those old Buddhistic temple-ruins of which VON LE COQ, GRÜNWEDEL and Sir AUREL STEIN have given such masterly descriptions. Along our route through the main valley there were also some grottoes and temple-ruins. The landscape was magnificent, with red sandstone cliffs rising steeply on either side. The rushing waters in the stream-bed were used in one place to drive a little water-mill. In Sengim-aghiz we halted for the night.

On the morning of February 19th, the whole party, with the exception of NORIN and myself, rode up to Bezeklik's grottoes, and returned at midday delighted with what they had seen. They had been in a large number of cells cut into the face of the cliff and showing clear traces of the work of the archaeological expeditions. There were still many mural paintings, although most of these had been wantonly damaged by vandals.[1] All the members of the party were very impressed by the ancient remains and the magnificent scenery.

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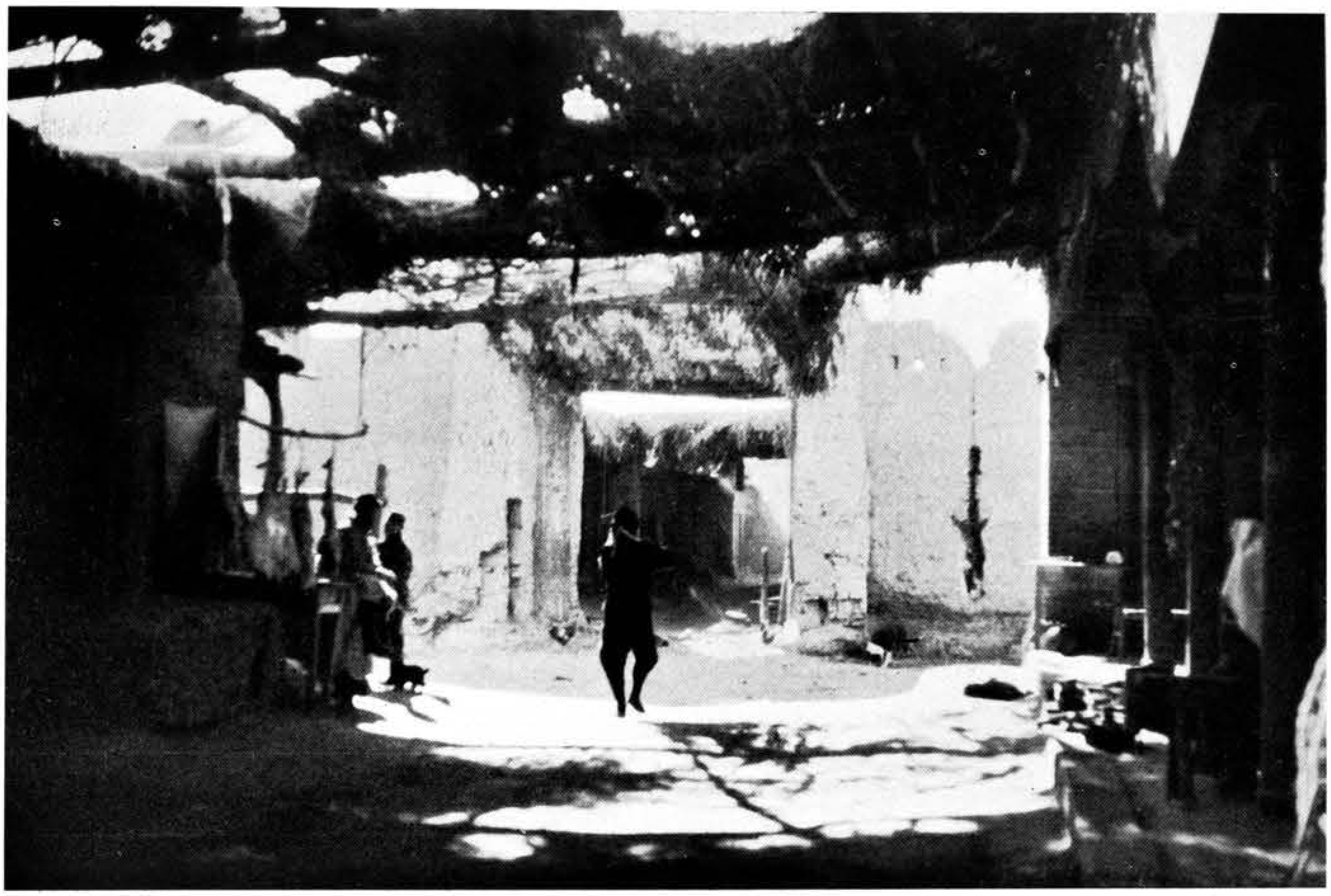
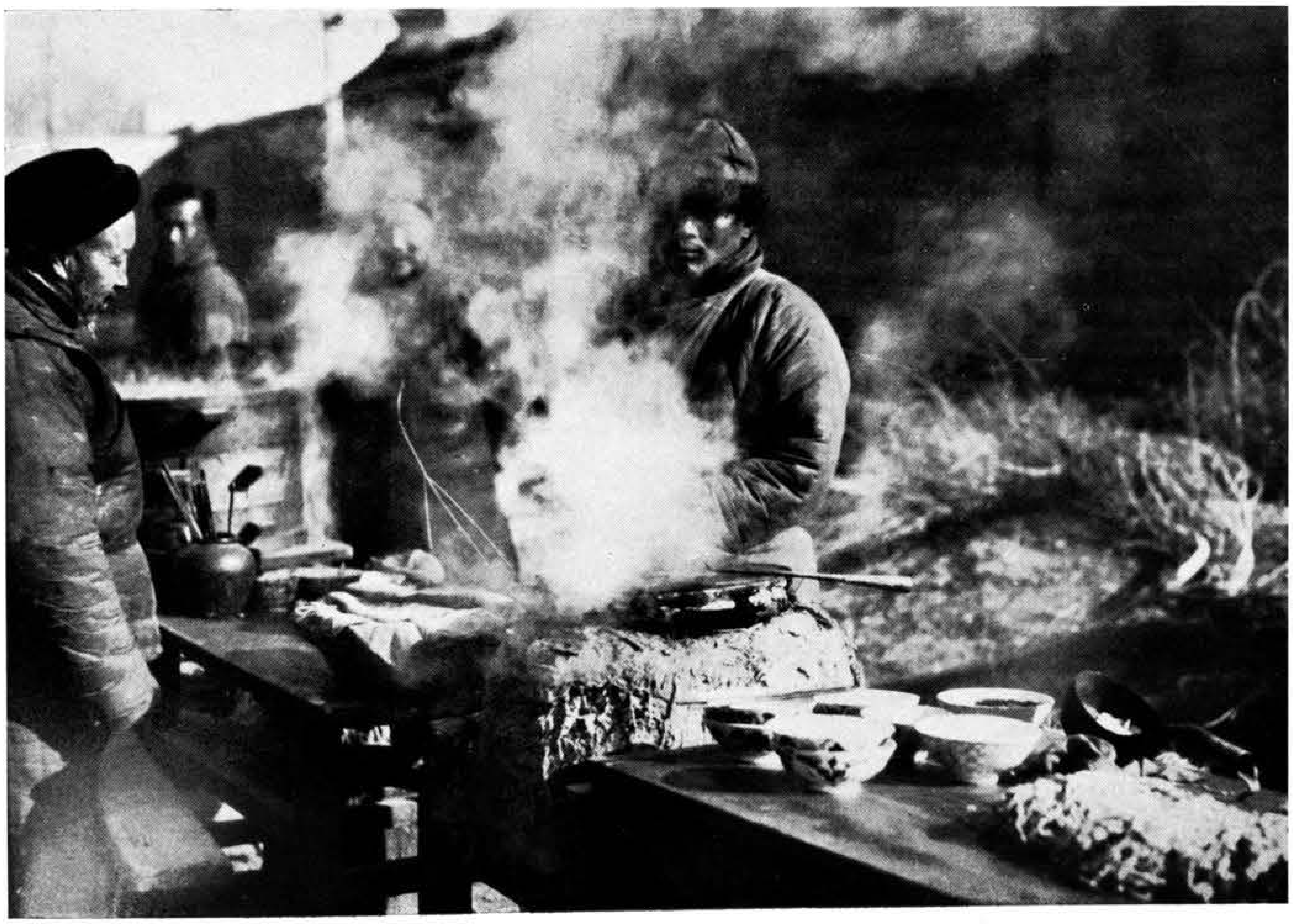
[1] The European explorer who last visited these temple ruins was the celebrated French authority on Buddhism, JOSEPH HACKIN, who studied them thoroughly in the course of the CITROËN-expedition in 1931. From his illustrations to essays in *Revue des Arts Asiatiques* 1935—36 it is clear that many of these magnificent frescoes still remained also at the time of his visit. F. B.



The covered bazaar of Pichan

Lieberenz Photo



Mohammedan street-kitchen

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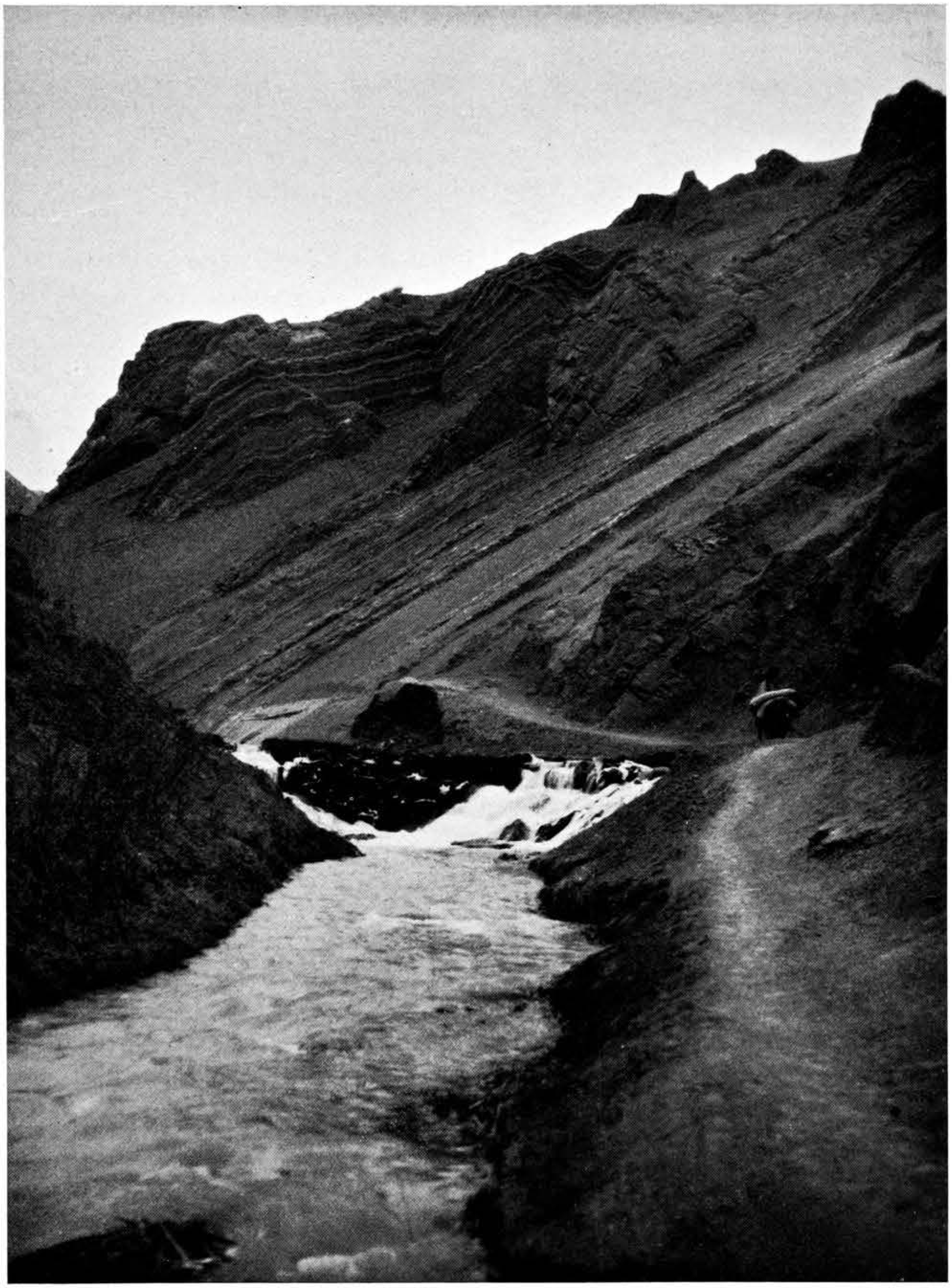

The Toyuq valley

Lieberenz Photo

In the afternoon **Hummel**, **Bergman**, **Siu** and **Ting** rode to the ruined town Qara-khoja, that had been investigated by **Grünwedel**, v. **Le Coq** and **Stein**. These ruins are situated fifteen li to the south of Sengim-aghiz. The rest of us continued our journey in our carts on the highway to Turfan, leading for the most part over sterile, flat, desert country. The curious depression around Turfan has its lowest part to the south of the town (according to **Stein**, 980 feet or 298 meters below sea-level[1]). About halfway between Sengim-aghiz and Turfan we found ourselves on the same level as the sea.

At midnight we drove into the courtyard of a little caravanserai in Turfan.

IMPORTANT GEOGRAPHIC INFORMATION

In this old town we rested for a day. Professor **Siu** and I paid visits to the burgomaster and the commandant.

From two Turfanliqs, **Tokhta Ahun** and **Khoja Abdul**, I learned a geographic fact that was as unexpected as it was interesting. For eighteen years they had travelled three or four times a year via Ying-p'an to Tikenliq on the Konche-darya to buy sheep that they afterwards sold in Turfan. Seven years ago, they related, the water in the Konche-darya had gone over to the dry river-bed Quruq-darya, afterwards continuing to flow in this channel. The place of bifurcation was stated to go under the name of Qusliq and was situated a day's march above Tikenliq. In the neighbourhood of Ying-p'an there was a ferry over the new river, that was so deep that it could not be waded. The river continued eastwards and gradually diminished as it fed small lateral arms that went to swamps and meres along the banks. The water was stated to give out three days' journey to the north of Tun-huang without forming any terminal lake; but neither of them had been there.

It may be understood with what delight I listened to this information if I mention that, especially during my long stay at Lop-nor and its delta in 1900 and 1901, I had foretold this event. I had compared the Tarim arms to a pendulum and Lop-nor to the weight at the end of it, that was now in the southern part of the desert and now in the northern part. The desert is almost entirely flat, and the water is therefore very sensitive to any changes in the level of the ground. When the then lake, commonly called Qara-qoshun, and the river itself in the course of time get their beds filled with silt-sand and decaying vegetable and animal matter, the water goes over to the northern lake-basin, that in the meantime has been complete desert and has become hollowed out by the severe spring and summer storms from E. N. E.

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[1] **Ambolt** afterwards established the depth to be 130 meters below sea-level. F. B.

In my work »Scientific Results of a Journey in Central Asia» (Vol. II, p. 355), published in Stockholm in 1905, I had written:

> »And in the light of the knowledge we now possess, as to the relations of level that obtain in the Desert of Lop, it is not too bold a thing to say that some time the river *must* go back to Kuruk-daria... It is merely a question of time, but the country hereabouts (Qara-qoshun) will become so choked with alluvia that the river will be forced to return to its northern bed. The lowermost limb of the river thus oscillates backwards and forwards like a pendulum, and even though the periodic time of each oscillation does amount to 1500 years, yet that, counted by the clock of geologic time, is relatively of no longer duration than one of our seconds.»

The river that in former times flowed just to the north of the town Lou-lan has thus returned to its old bed, precisely as I foretold that it would in the year 1905, and although the period for the swing of the pendulum amounts to many centuries I have had the happiness of myself living to ascertain the correctness of my theory.

The information I was given in Turfan, however, might be supposed to be pure fantasy or based upon misunderstanding. Both NORIN and I were therefore agog to confirm the fact by a visit to the place itself. No European had been there since the water had changed beds. It was, however, not possible to make the visit there and then, as Governor-General YANG had summoned the whole expedition to Urumchi.

TURFAN

As is so often the case in Eastern Turkistan, Turfan consists of two towns. The burgomaster and the commandant have their official premises in Kohna-shahr, i. e. The Old Town (= the Chinese town), that is inhabited by only one hundred families. It is surrounded by a wall and has four gates, though that to the north is scarcely ever used. A little over a kilometer to the west of the Chinese town lies the Turki town, Yangi-shahr (The New Town), founded in 1873 by YAQUB BEK and inhabited by six hundred families. Only a twentieth part of the inhabitants of Turfan are said to be Chinese.

Going through Yangi-shahr we drove along a long bazaar-street provided with canopies of straw mats supported by poles. On either side of the street were booths with red signboards and blue, green or red strips of cloth with inscriptions along the edge of the roofs. A break in the line of booths is made by the mosque with grey cupolas that stands on the south side of the street. But the narrow thoroughfare itself, which is also the highway to Urumchi, is a perpetual jam of the liveliest traffic imaginable. We found the greatest difficulty in making our way between riders and carts, camels and asses, customers and tramps, dervishes and beggars, women in white head-cloths, afoot, riding on asses or driving in little blue carts. There were two-wheeled *arabas* loaded with coal, jostling asses bearing water in wooden tubs, strings of camels loaded with bales of cotton. Merchants sat in their booths selling fruit, sweetmeats, tobacco, cloths and junk of all sorts. One glimpsed a Chinese temple; and here and there a sunbeam stole through the canopies and formed a pleasant patch of light and colour on some Chinese shop-sign of cloth. A medley of voices and cries and noises and tinkling bells filled the tunnel, whose sun-sheltered atmosphere provided a sort of twilight. Our escort, a third of whom were remaining behind in Turfan, rode half drunk before my cart to clear a passage; and slowly and creakingly we made our tortuous way through the crowd till we finally reached the place where the asses' water-tubs were filled and where snow-white geese were gabbling near a canal, while doves with little pipes bound to their tail-feathers produced a whistling sound when they flew. On our left we passed a *mazar* or holy grave, surrounded by many other graves.

INTO THE T'IEN-SHAN AGAIN

After an hour and a half we saw the last groves of trees and fields disappear behind us and were once more in desert country. Between sterile hills and with red mountains on our right we swung round to the north-west up through a valley where a little village was situated near a stream. The route left the valley and traversed the hills to the left. They consisted of sandstone, and had been filed and eroded by winds and storms into bizarre shapes that by the light of the setting sun resembled red ruins. Late that evening we landed up at the village K'ang-k'ang, called in Turki Qindiq.

Here one of our soldiers reported that the chief of the escort had disappeared, and presumably lay dead by the wayside. I replied that there was probably no cause for worry and that he would very likely turn up in due course. And sure enough, later that night he made his appearance in K'ang-k'ang. He had tumbled off his horse, which had promptly bolted; and when the man had slouched off to look for his mount he had forgotten his rifle and been beaten up by his own men. This had sobered him up.

The march on February 22nd took us parallel with the mountains. The countryside was absolutely sterile. Beyond the village Togra-su the sun sank below the horizon, and presently it was quite dark. Armed with an electric torch, NORIN went on ahead on foot and showed the way, that was here rather confusing. When late that night we arrived in the village Qovurga, or as the Chinese call it, San-ko-ch'üan-tze or »The Three Springs», HUMMEL and BERGMAN, who had ridden on ahead, had already arranged for our somewhat bare accommodation and prepared an excellent dinner of soup and chicken.

On the way to Kugolo or Ho-k'ou, that led through a ruddy and undulating country of limestone and sandstone forming flat spurs and valleys, we passed the boundary between the districts of Turfan and Urumchi, marked by a boundary-stone.

When on the morning of February 24th we left our gloomy and drab little lodgings we found ourselves surrounded by a magnificent landscape, a narrow valley squeezed in between mountains and containing a rushing stream. The bottom of the valley was made shady by young willow-trees. A donkey-caravan was just being loaded with big white cotton-bales that were to be taken to Urumchi. In the north-west loomed a mighty range of brownish red mountains.

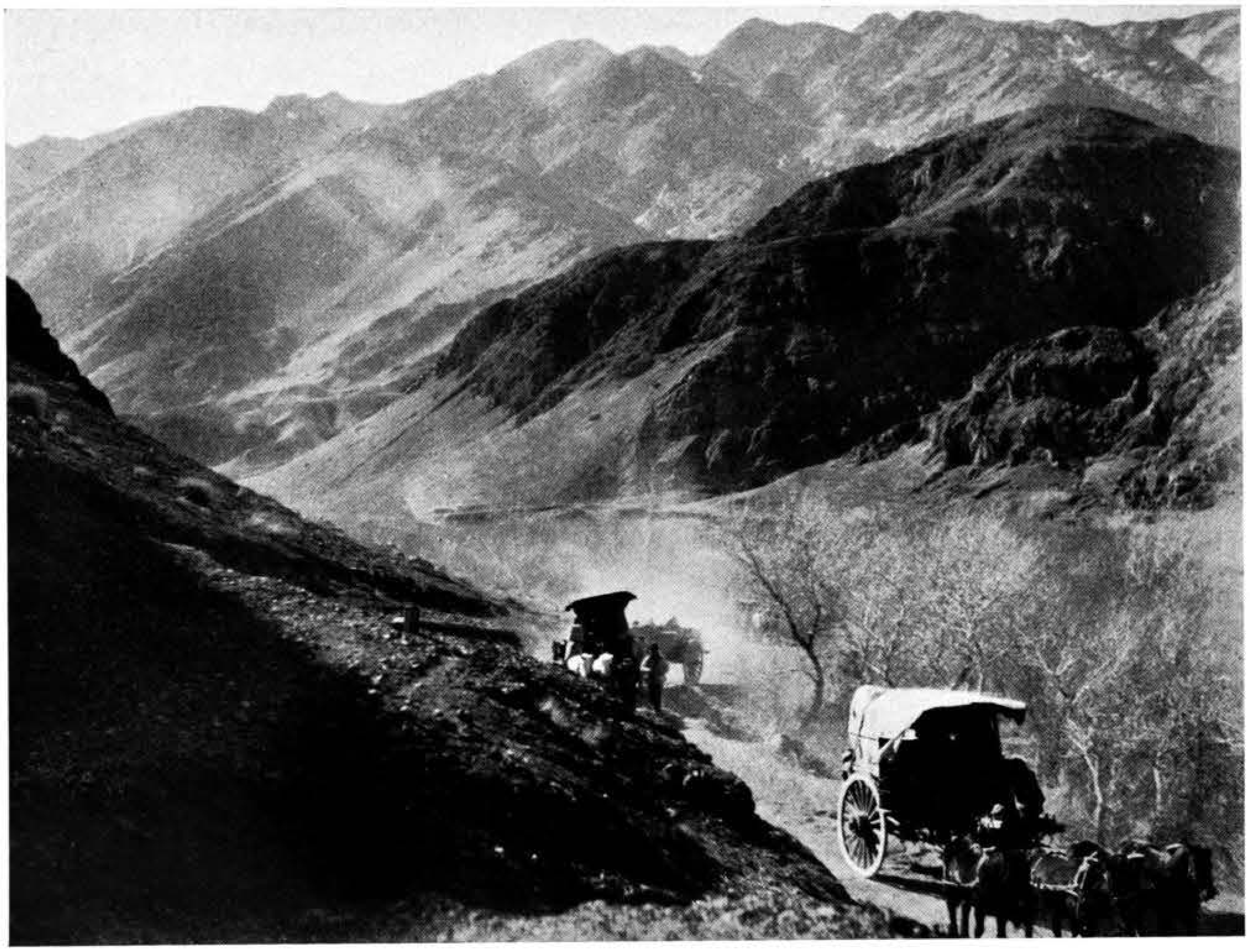
OVER THE PASSES AT DAVAN-CH'ENG

We set off on what was to prove rather a trying day's march. At first we went clattering heavily over the gravel of the river-bed, and were soon splashing through the rushing water of the stream itself. On reaching the other side the horses had to put forth all their strength to drag the heavy vehicles up onto a *karnis* path to the right, where we had to cross several outcrops of hard rock. We were thrown about so violently on this rough road that we had to hold on tight to the sides in order to ease the effect of the worst jolts.

Presently we were making our way down to the stream again and forcing a passage through dense willow-groves, with the branches and twigs swishing against the hoods and windows of the *arabas*. When we finally left the stream behind us to start on a new ascent the gradient was somewhat milder, though still so steep that the horses could only take from ten to twenty steps at a time. From behind we heard shouts and cries. One of the arabas had stuck fast, all the drivers were lending a hand to lift it clear. We longed for the pass, but ever fresh views were disclosed with every turn of the winding road ahead. Progress was heavy and slow owing to the steepness of the ascent. But at last the longed-for crest of the pass appeared to view. A deep-cut hollow led through it on the comb itself, so narrow that an araba could only just squeeze through. A magnificent range of snow-capped mountains took the eye to the north. These were the southern side of the Bogdo-ula.

The road leading down from the pass was still steeper, and the front horses were all unharnessed, leaving the horse between the shafts to manage the cart alone, except that one horse was hitched on behind as a drag. He set stiff fore-legs against the downward slope, at the same time so bending his rear legs that he was sometimes almost sitting on the ground. One wondered whether the heavy load behind him would not prove too much for him, but he managed the descent without mishap and arrived in due course at the poor hovel called Ho-ku.

One more pass remained to be traversed. The way up was short but horribly steep, and eight horses were needed for each cart. At the northern foot of this ridge we swung off to the west and crossed the river flowing through the range with the two passes, that we had already seen from our last camp. To the north

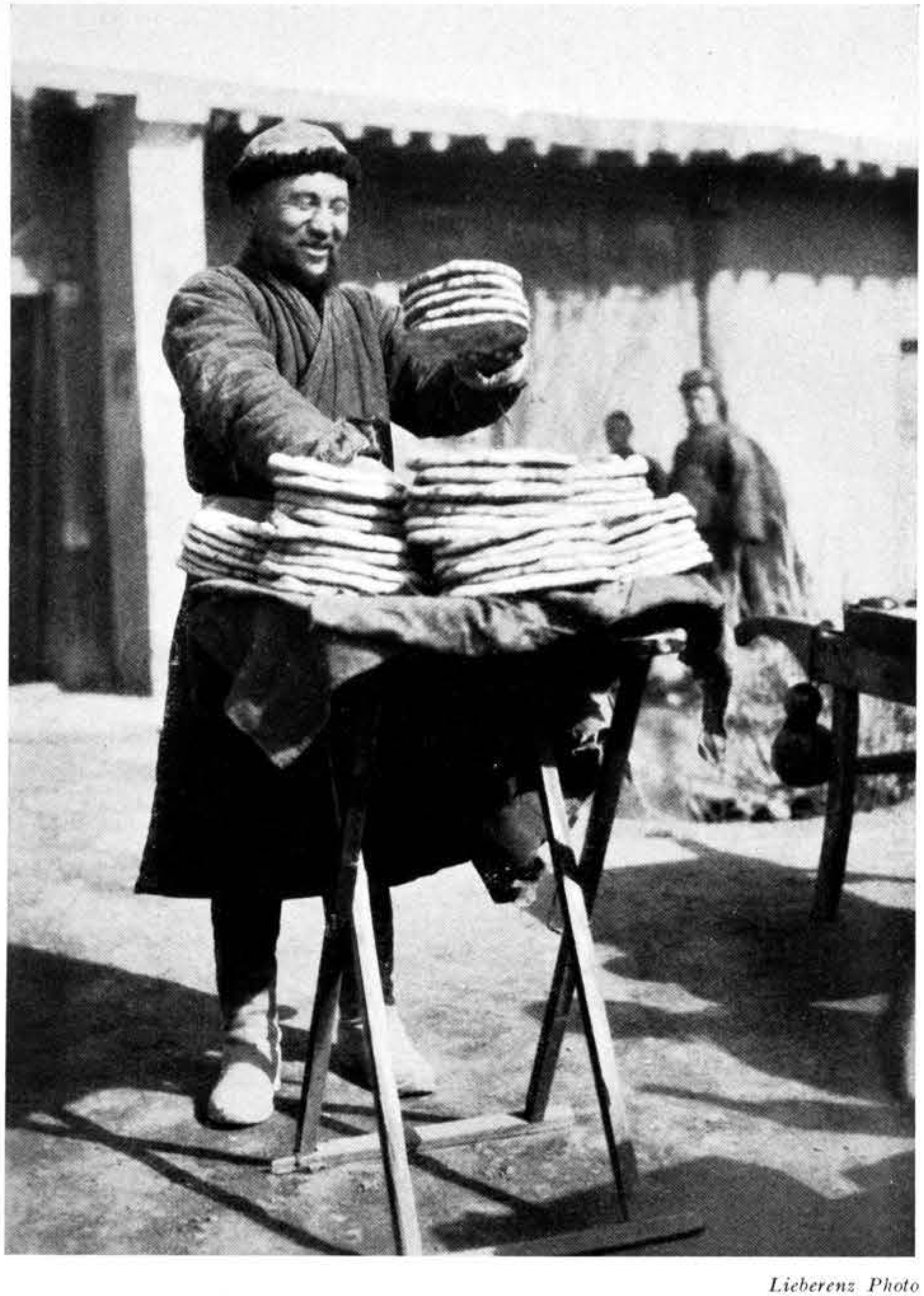


Our arabas at the foot of the passes near Davan-ch'eng

Lieberenz Photo

Negotiation of the southern pass near Davan-ch'eng

Lieberenz Photo



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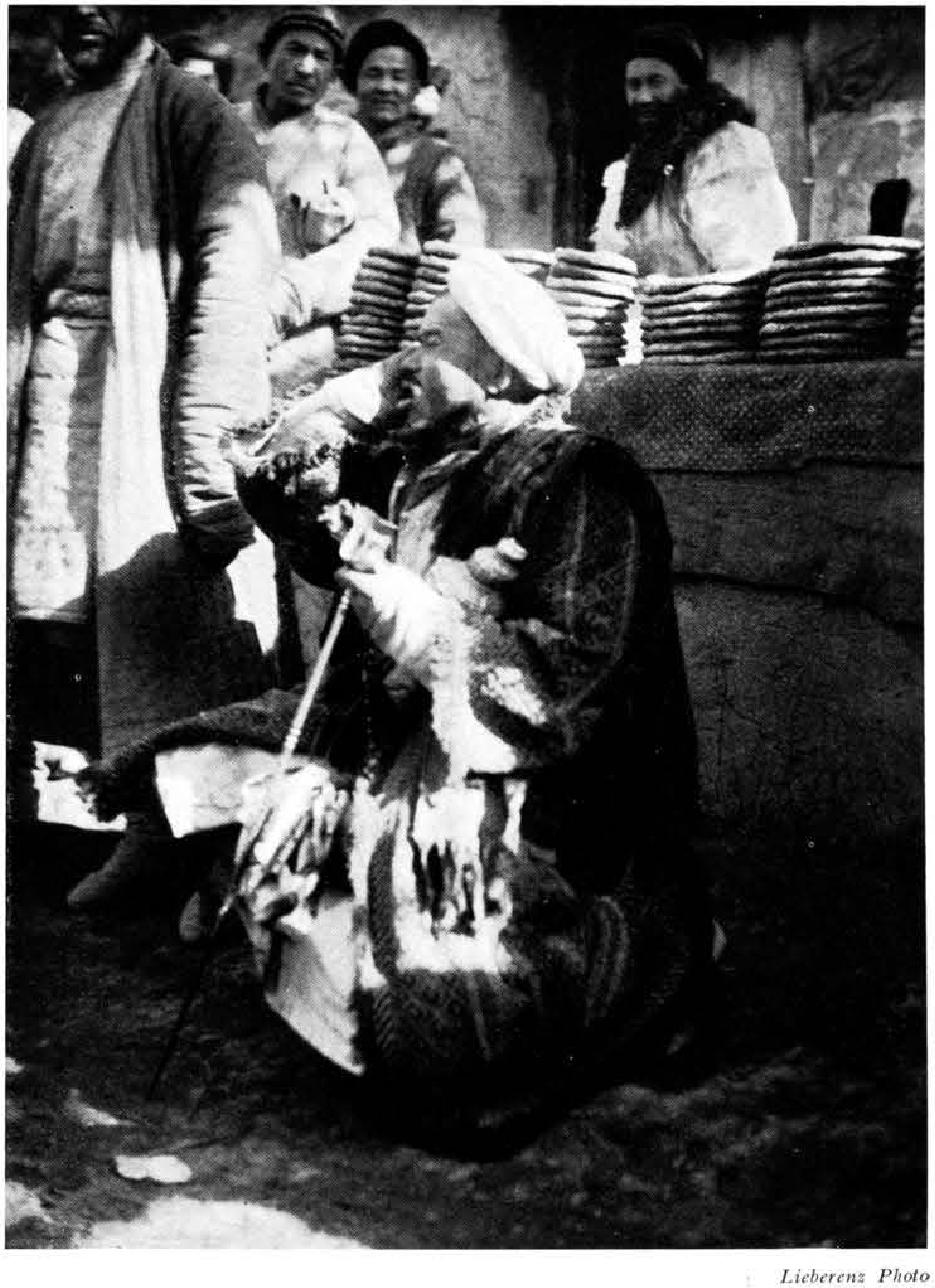
The Turki baker sells his excellent white bread in the street



Lieberenz Photo

A singing dervish in the street

shimmered the reddish violet slopes of the Bogdo-ula chain with their beautifully glittering snow-fields. On our right we had swamp and sheets of ice, that made rather troublesome going. We spent the night at the village Davan-ch'eng.

On February 25th we continued our journey to the west, over flat ground with high T'ien-shan ranges both to the south and the north. In the course of the day we passed a little lake on our left. Late that evening our driver IBRAHIM lost the road in the dark and was within an ace of tipping us into a treacherous pit. The name of our camping-place for the night was Ch'ai-o-p'u.

The last day but one of our journey took us through a driving south-east storm to the village Chi-chi-ts'ao-tze, and when on the following day, February 27th, we rose to cover the last miles to Urumchi we were met by whirling snow, the ground was white and the weather raw and cold. In the half-dark stood our carts and horses, bearing a wintry mantle of snow. But later in the forenoon the snow turned to slush. The country was undulating and we passed several small ridges among the foot-hills of the Bogdo-ula.

ARRIVAL AT URUMCHI

Early in the afternoon we were driving along a street on the outskirts of Urumchi of seemingly bottomless mud, and here we drew up before a one-storey house in Russian-Asiatic style. This house, that had been placed at our disposal by Governor-General YANG, had belonged to the Russian-Asiatic Bank, which had gone bankrupt the previous autumn. Those of our companions who had arrived in Urumchi before us now came out and took us straight in to dinner. Also present at the meal was the Tartar BURKHAN, the Governor-General's interpreter and the head of his motor-garages and their staffs. BURKHAN and GMIRKIN, a Russian, had been commissioned to attend us and be at our service during our stay in the capital of Sinkiang, while two Chinese officials, WU and LI, were to attend upon our Chinese members.

XI. IN URUMCHI

In the spacious courtyard of the bank Dr **Haude** had his meteorological observatory already in full swing, observations being carried out by **Dettmann** and **Li**. **Haude** himself, meantime, had gone to the Bogdo-ula, where at an altitude of 2700 meters he had established a mountain observatory.

After dinner we had a number of visitors, amongst others the two Catholic missionaries, Father **Hilbrenner**, a German, and Father **Veltman**, who was Dutch. The latter two gentlemen proceeded to give me an insight into conditions in Urumchi. They were fond of a joke, high-spirited, and learned, and in the period that followed it was always a pleasure to meet them.

As the whole staff was now assembling at our new head-quarters in Urumchi it was not possible for all to be accommodated in the one house, and **Hempel** had therefore taken another house in the same street. This place was also in the Russian style and belonged to an old Sart from Tashkent. Thither I now betook myself with **Norin**, **Hummel**, **Bergman**, **Siu** and **Ting**. Each had a room to himself, and we had plenty to do till evening getting settled in our new quarters.

Here we were, then, in Urumchi, or Ti-hua as the Chinese call it,[1] the metropolis of the powerful **Yang-Tseng-hsin**; and the full two months that I and some of the members of the staff spent in this town were of great importance for the future course and development of the expedition.

MEETING WITH GOVERNOR YANG

After we had fulfilled the usual courtesy obligations of travellers who are guests in the country, such as announcing our arrival and sending our visiting-cards, I was requested to present myself, together with my not yet complete staff, at the house of the Governor-General at 12 o'clock on February 29th. We had thus to prepare ourselves for the first ocular inspection.

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[1] Opinion differs as to whether the name Urumchi (or Urumtsi according to the Russian transcription) is a Turki or a Mongol word. Ti-hua is the official Chinese name; but just as frequently the city is called Hung-miao-tze or Sinkiang-sheng by the Chinese. F. B.

Through the bottomless mud of the streets, where in the course of our stay a couple of horses and even children, it was said, were drowned, we drove in a little procession of little blue Peking cars. Along the main street of the Russian quarter we went, through the Turkish quarter and the mighty gates in the wall of the Chinese town till we came to YANG's *yamen*, a complex of red houses with courtyards in between. We had to go across two of these square courtyards before we reached the presence-chamber. The soldiers outside the gate presented arms, and we were met in the vestibule by the ruler of Sinkiang, surrounded by the two ministers FAN YAO-NAN and LIU WEN-LUNG and some officers and soldiers from his body-guard.

At last we stood face to face with the autocrat who at the eastern frontier of his province had accorded us such a chilling reception, and who, if he had so chosen, might have destroyed our plans and forced us to turn back. With stonily serious mien and penetrating looks he mustered us each in turn, greeting each with a hand-shake and a scarcely perceptible bow. One felt very clearly that it was he who had the power here in the country and that we were quite at the mercy of his lightest whim. He was a tall, powerfully built man, of dignified and noble bearing, who carried his head high and gave one an impression of majesty. His look was dreamy, melancholy and searching; he had a broad, strong nose and snow-white moustaches and goatee beard. He was, in a word, imposing and fascinating, and one always feels a certain interest in observing at close quarters a man who by dint of his own will and shrewdness has been able to achieve such terrific power over other men.

We had heard much about this remarkable man. We knew that he had been born in Yünnan in 1862, that he had held a number of different official posts in Kansu and had gradually risen in rank until he was finally appointed military governor of Sinkiang, in which capacity he had put down revolts and riots among Tungans, Kirghiz and Mongols in Altai and Ili. And this post he had held ever since 1911, the year of the revolution, or for a full seventeen years. During this period he had crushed all attempts to rebel against his power with a hand of iron. He had encouraged commerce, improved roads, introduced the motor-car, founded an electric power-station and an engineering work-shop and was still busy with new plans of improvement. We knew that ever since the beginning of the civil wars in China this man had kept Sinkiang out of all the fighting. The one man for whom YANG seemed really to feel respect was FENG-YÜ-HSIANG, »the Christian general». YANG ruled over a realm measuring 1200 kilometers from north to south and 2000 kilometers from west to east. The total area of this vast region is about 1,600,000 square kilometers, so that it is more than three times as big as Sweden; but on account of its limitless deserts it is inhabited by only about three million Turkis, Mongols, Kirghiz, Tungans, Taranchis, Tachiks, Dolons, Tatars and Chinese — though YANG himself stated that in the light of the sum from the collection of taxes the figure might be set at eight millions.

We had been told that YANG was cruel, and that without trial and sentence he had Tungans shot on mere suspicion. Even before leaving Peking I had heard a story about a couple of foreigners who had come to Urumchi and been invited to a reception in the governor's yamen. Half way across the outer courtyard an officer had stopped them and requested them to wait. Three criminals were led up, set against a wall and shot in the presence of the white guests. With a polite gesture the officer bade the foreigners continue on their way to the room where dinner was to be held. YANG, who was considered to be unfavourably disposed towards whites, had chosen to give these strangers a little sample of his power.[1]

He was also considered to be just, and he exacted an absolute discipline in his little army of about two thousand ruffians. On one occasion, shortly before our arrival, when on his usual morning walk through the streets of the town, and accompanied by a couple of body-guards, he caught sight of one of his own soldiers outside a shoe-shop. With an iron-shod stick the man was stealing one pair of shoes after the other. YANG stood still and watched. Then he gave a sign to his men, and they shot the thief on the spot. While one of them procured a little wooden cage the other one cut off the thief's head, which was put in the cage and hung at the side of the shop. There it was left hanging for weeks as a warning to thieves.

The room into which we were now shown was an oblong, white-plastered and rather shabby apartment, the greater part of which was taken up by a long table. The Governor-General took his place in the middle of one long side and invited me to take the seat opposite. Behind him was a stout officer with black moustaches and a jovial disposition, who followed him about as a body-guard. Servants brought in cognac and white wine. Before YANG lay a thick dossier referring to our expedition. He flicked through the papers, took out a letter and handed it to Professor SIU. »This letter,» he said, »is from a nationalistic student in Peking. It arrived here some months ago and was addressed to a student

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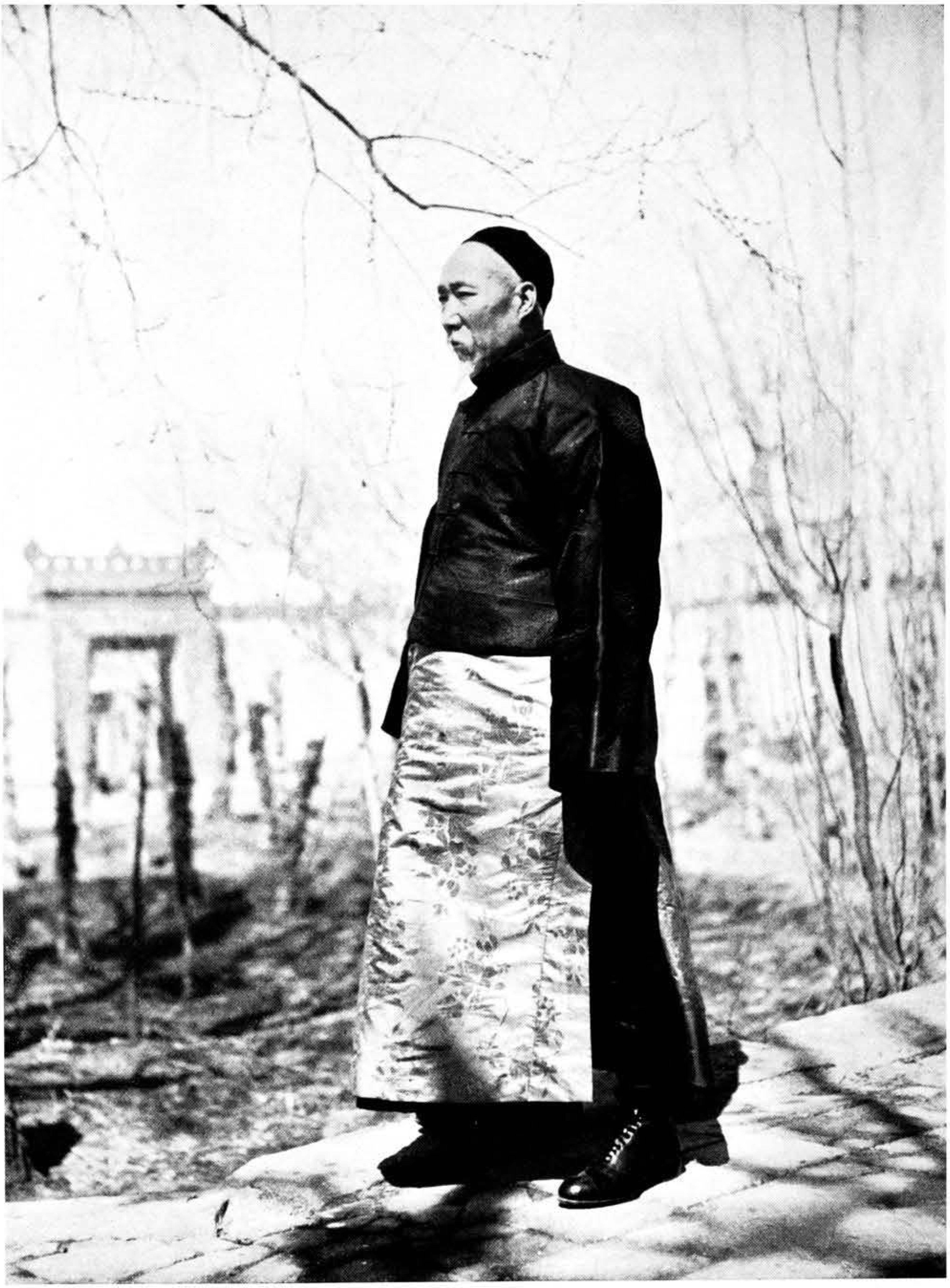
[1] NICHOLAS ROERICH, who had rather unpleasant experiences of Governor-General YANG during his stay in Urumchi in April 1926, but who also seems to be rather over-sensitive, writes in his *Altai — Himalaya* that the Peking government many times tried to replace YANG, but that this shrewd old man gathered signatures from the local officials and sent to Peking a »petition of the population» made up by himself, to the effect that only the presence of YANG had guaranteed the peace of the country.

In 1913 YANG suspected his eight relatives of treachery. He therefore arranged a banquet, invited all officials and during dinner, with his own hands, shot the chief suspect; and the guards at the same table made an end to the seven others. In 1918 he had a grievance against one of the Ambans. He sent the disfavoured one to Hami and on the way the Amban was »pasted with paper» and by this unique method he was strangled.

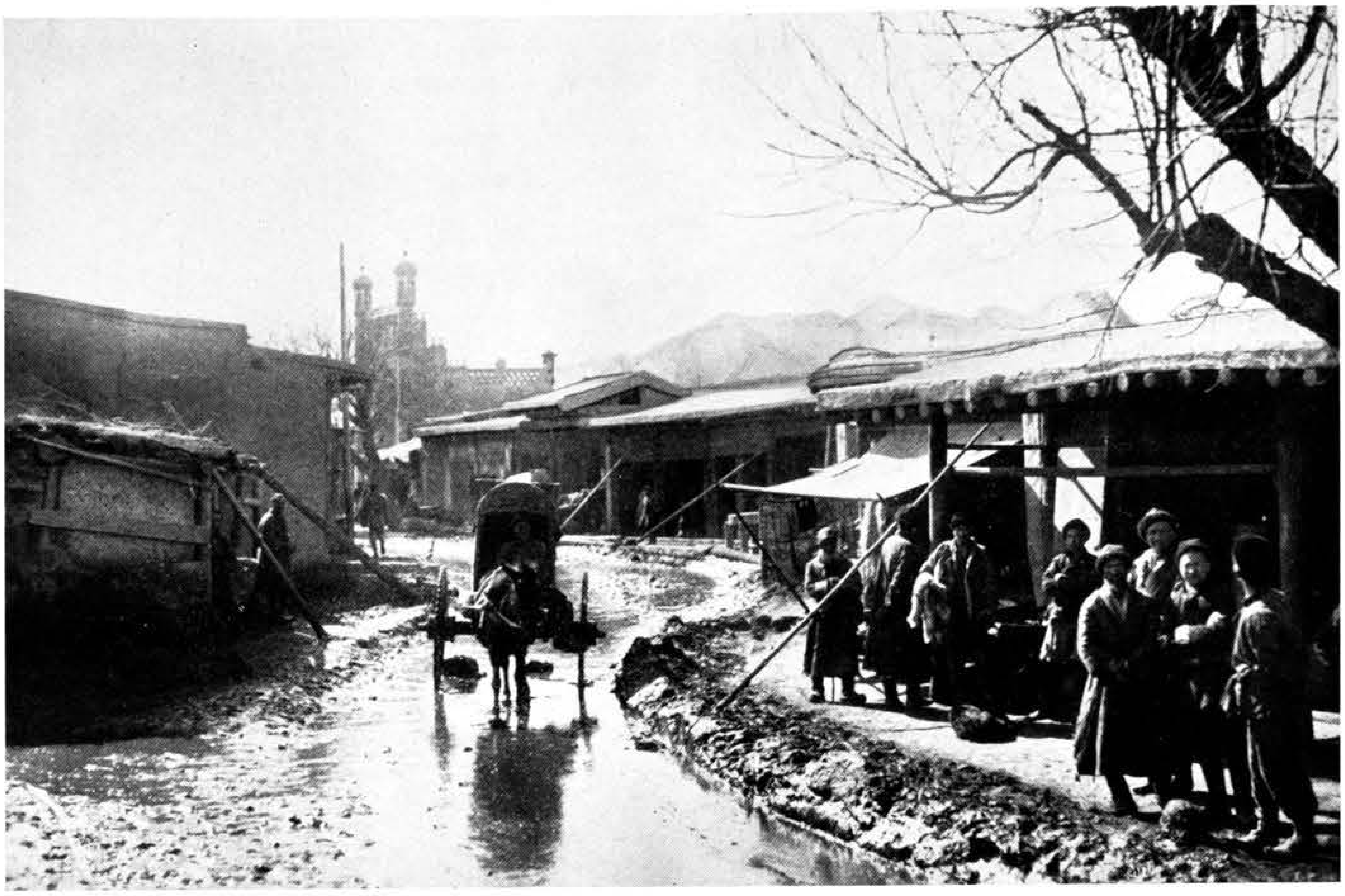
There is one hope — writes ROERICH — YANG is very old, and his »benevolent» strangulation of the huge country cannot continue for long. F. B.



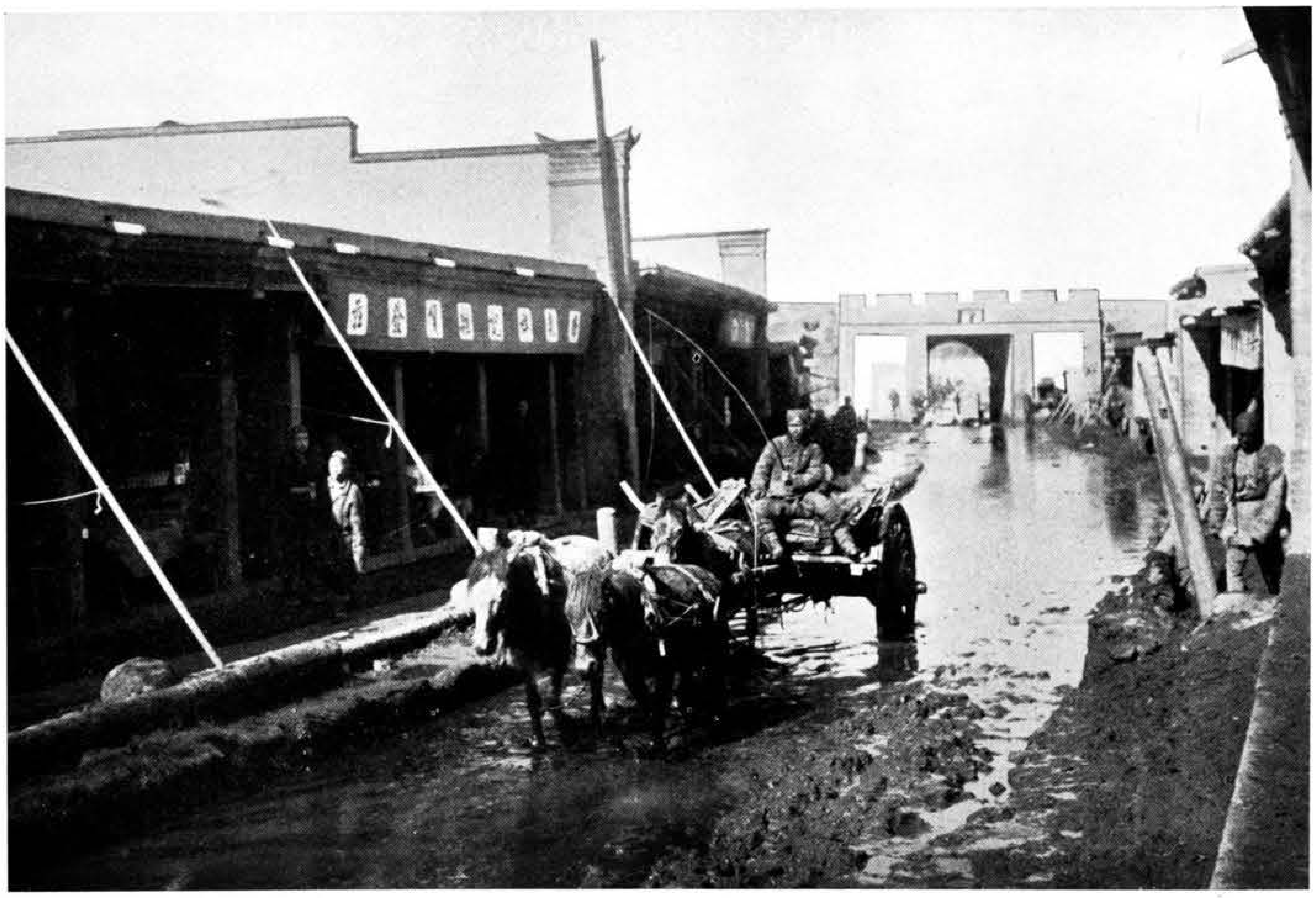
Lieberenz Photo

Yang Tseng-hsin, the mighty Governor-General of all Sinkiang

PLATE 50



A Peking cart in the dirty main street of Yang-hang, Urumchi *Lieberenz Photo*



Araba in one of the flooded main streets of Urumchi *Lieberenz Photo* named LI. It was sent on to me by the censor as an extremely suspicious document. You will understand that when there is talk of troops moving towards the eastern frontier of Sinkiang, I must be careful. This was why I gave orders that you should be closely examined when you approached Hami.»

SIU read the letter and translated it for me. It contained the following sentence: »I congratulate you on having two hundred soldiers in your caravan!» — a joke, that was not meant so seriously as it sounded. And as the reader may remember, we had had a military escort only during the first week's march, through a district that was infested with robbers.

Champagne glasses were now filled. YANG stood up and held a speech, that was translated by BURKHAN. He bade us welcome to Ti-hua, a town whose dirty streets illustrated the present political conditions in China. »It is a blessing for science, for Sinkiang and for the whole of China that you, gentlemen, have come here. You will wrest natural secrets from our great province, you will find precious metals and coal and teach us in our attempts to increase Sinkiang's prosperity. I count it a privilege to facilitate your endeavours in every way.»

In my reply I thanked Governor YANG for the magnificent hospitality he had already shown us and for his promise to give us his powerful help.

In the freer conversation that followed YANG was surprisingly open about his views concerning the civil war between the different generals. I handed him the letter, now over a year old, that Marshal CHANG TSO-LIN had written me with his own hand. He read it through with impassive mien, but afterwards indulged some derogatory remarks about the marshal, who in his opinion was fighting only for his own personal advantage.

We knew that YANG was a learned and able man. He had already published his own memoirs in thirty volumes, and was still making daily notes of his life and the government of the province. He therefore had great respect for all writers of books, and paid me the compliment of expressing his awareness that I had published several works, in particular concerning the geography of Sinkiang.

YANG's DINNER

On the 4th of March we were invited to a big dinner in this same room, on which occasion we were regaled with an endless succession of genuine Chinese dishes, shark's fins, bamboo shoots, marine algae, swallow's nest soup, roast duck and all the other gastronomical items belonging to the better-class Chinese table.

YANG brought up the subject of our plans and desiderata himself, and I took advantage of the opportunity to ask if NORIN might make a geological journey to the Lop Desert, and BERGMAN and HASLUND an exploring expedition to the same tracts for archaeological purposes. My request was granted at once, and it appeared that no special passports would be required. Further, I asked permission to establish permanent meteorological stations in Charkhliq and Kucha, where Germans and Chinese were to make observations. This, too, was granted. He regretted, however, that he could not permit us to establish any station in Hami, as this town was situated in the war-zone. But we might take Turfan, Ku-ch'eng-tze, Chuguchaq or Kulja instead.

Despite his serious demeanour, YANG was not above a joke. He asked me: »Why do you take the trouble of riding about in the deserts looking for old ruins? Here in my yamen you have ample opportunity of studying archaeology, for as you see, everything here is tumble-down, and the plaster in this room is falling off in big flakes.»

Such dinners last for a full four hours, and one sits at table the whole time. When we finally rose to drive home our host followed us politely over both court-yards and stood there bowing until we had taken our places in the Peking cars.

We afterwards heard from several quarters that YANG had never before received European travellers with such amiable courtesy. On a later occasion he said to me: »Your expedition is the last from Europe that I shall allow to travel in my province. I intend to close the frontiers on those who attempt to come here in future. But you may stay as long as you wish.»

ANOTHER OFFICIAL DINNER

On March 7th the two ministers with whom we were in constant contact through their respective departments, namely FAN YAO-NAN, the Foreign Minister and LIU WEN-LUNG, the Minister of Education, gave a thundering dinner with occidental, (i. e. Russian), menu for the members of the expedition. It was held in FAN's house, which had been built in the Russian style but with Chinese court-yards. There were lots of speeches and we were regaled with a rich abundance of food and drink. It was evident from this almost barbaric luxury that the Chinese were determined to do us honour in every way.[1]

On March 8th LARSON and his column of twelve carts arrived from Hami after a successful journey of twenty-six stages. We now had practically the whole expedition assembled in one spot again, and our quarters became crowded.

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[1] FAN's features betrayed him as an inveterate opium-smoker. YANG was said to appoint only hardened opium-smokers to the local official posts in the extensive province. This may partly be gossip but in many cases, that I later on had an opportunity of studying, this proved to be the fact. YANG's ulterior motive was that an inveterate opium-smoker thinks more of his own comfort and convenience than of stirring up unrest among his subordinates. F. B.

Much precious time was lost with the visits and counter-visits that had to be paid. One day FAN and LIU came to ask both on their own and on YANG'S behalf to be permitted to see our meteorological station. The instruments were demonstrated for them by our students LI and LIU.

DETACHED EXPEDITIONS LEAVE

Various expeditions now began to set out from our new headquarters in Urumchi. On March 9th NORIN and his servants started out for Turfan in order there to equip his caravan for researches in the Quruq-tagh and the Lop Desert.

On March 13th the student LIU set off with MARSCHALL to relieve HAUDE at the Bogdo-ula mountain station, and the same day BERGMAN and HASLUND began their journey to the Lop Desert. They had three carts for the transport of their baggage to Turfan. There they collected about thirty of our own camels that had arrived from Hami. NORIN, too, had already taken thirty-five of our animals from this town.

VISIT BY YANG

On March 18th I was woken early with the message that the Governor-General himself was on his way to our house and would be making his entry in the courtyard in a short while. Fortunately, however, it was a couple of hours before he made an appearance, so that we had time to procure cakes, sweetmeats, fruit and champagne and to lay the table in the dining-room. Presently the street was filled with the escort, fifty mounted men in red leather uniforms. Some of them rode into the courtyard, the others stood guard at the entrance from the street. The trumpet blasts gave echo from the nearby houses, the little blue Peking-car drove up to our steps and the great YANG alighted, to be received by SUI and myself. We accompanied him into the dining-room, where, after the usual greettings, I wished him a long and happy life. In return he thanked us for having come such a long way to discover treasures in his province. The mighty governor was then pleased to joke, and said that if he and I were to change posts Sinkiang would flourish, but the scientific expedition would soon be all at sixes and sevens, to which I replied that in consequence of such a change Sinkiang would certainly soon be in a horrible mess, whereas the expedition would surely go ahead under such a strong leader.

After a couple of hours YANG rose, and we followed him out to his car. As his mounted guard disappeared down the street I was irresistibly struck by a wild thought: pray God nothing happens to him just after he has been on a visit to us!

Later that day **Burkhan** came back and I had a long conversation with him on the subject of flying over the desert tracts that were not accessible by camel. He became very interested, and promised to support my application for a permit, which, as usual in such cases, should go through the Minister for Foreign Affairs.

When **Burkhan** had explained my desire in detail to the governor himself I was requested on March 20th to present myself together with Siu to Fan, the Foreign Minister.

In his soft and urbane voice and with much bowing Fan informed us that he had that same day had a long conversation with Yang and received his instructions. About a year previously the Foreign Office in Peking had informed Yang of my desires and stated that for its own part the government had refused permission to fly. It left Yang free, however, to come to his own decision as regards Sinkiang. For political reasons the Governor-General was unfortunately obliged to refuse my request. China's domestic affairs must first be put in order. Fan offered a thousand apologies, but pointed out that it would be necessary, until further orders, to await the course of events.

The idea of flying thus had to be shelved, and it was small consolation that Fan had been commissioned to ask me on Yang's behalf to take out in Sinkiang-liang the whole sum of sixty thousand silver dollars that we needed for our stations and expeditions. This was a sign of great confidence on his part, for we had not yet been in a position to pay in this sum to Yang's son-in-law Wang in Peking.

That evening a raging storm broke loose. It went shrieking over the roof and whined and whistled round the house. The next day we had a heavy snowfall and the dirty town became quite white — except for the slushy bog in the streets, that now became worse than before.

We were without reliable news from the outside world, although there was wireless communication with Mukden and Tientsin. There was also a telegraph line over Suchow and Lanchow, but it was very slow. One line went over Chuguchaq, joining up with the Russian telegraph system. Owing to the spring weather the roads were in such a state that neither motor-cars nor carts could make the trip between the Russian frontier and Urumchi, so that for long periods we were frozen in, so to speak, like Polar explorers, without news.

FOREIGNERS IN URUMCHI

The quarter in which our house lay was called the Russian Concession or Yang-hang, for this, the southernmost suburb, had been thrown open to the three hundred white-Russian refugees who had sought refuge in Urumchi. The majority of them lived in humble circumstances, earning a livelihood as artisans, bakers, laundrymen, needle-workers and such like. The former imperial Russian consul-general, DJAKOV, had also, since the revolution in his native country, stayed on here. He was allowed a small pension by YANG, but lived very poorly, as he sent most of his allowance to his family in Russia.

In Urumchi there were also a couple of Russian doctors and chemists. A very well-situated merchant family by the name of GMIRKIN lived in the best private house in Yang-hang. Besides these white-Russians, who were fugitives from their own country, there were but few Europeans here. The two English missionaries RIDLEY and HUNTER of the China Inland Mission I had met in Hsi-ning more than thirty years previously. They lived here in a simple house, teaching and preaching as of yore. The two Catholic priests of the Societas Verbe Divine I have already mentioned. Thanks to his friendship with FAN, the Foreign Minister, Father HILBRENNER, was often able to plead our cause to very good effect in delicate matters. Almost daily one or another of us was a visitor or a guest in the magnificent Catholic mission station.

The Postal Commissioner was an Irishman, Mr J. McLORN, who with his young, charming wife lived in a splendid stone house in the Chinese town. At the hands if this amiable couple we also enjoyed the greatest hospitality, and Mr McLORN did us many invaluable services.

Another European was the young German merchant SCHIRMER, who represented the firm of FAUST & Co. He helped us in connection with the engaging of servants, purchase of horses and provisions, forwarding of parcel-post from Europe etc. Both he and his wife were also extremely hospitable to us. His brother-in-law ANTONOV, a former officer in the Russian Black Sea fleet, and the latter's wife were also among our friends.

The only foreign power maintaining representation in Urumchi was the Soviet Union, which had a consulate-general in the town. In our closest neighbourhood just over the street was their big lot, on which were several white houses, including a club, a theatre, a bank and a tennis-court in the garden. From this same lot, too, rose the green spire of the white-Russian church, from which one could hear the bells ringing for divine service. The former consul-general, who had left Urumchi a year before, had forbidden the white-Russians to hold services in their church; but Governor YANG gave orders that the church be kept open for divine service and for the congregation.

In company with LARSON and LIEBERENZ I paid a visit to the new consul-general, Mr GAVRO. My companions, and later also v. KAULL, were going to return home, and needed passports and information. Before one could travel from Sinkiang to Russian territory it was necessary to get a special permit from Moscow, and Mr GAVRO arranged all such formalities with the greatest readiness. We experienced, in fact, nothing but good-will and obligingness from the Russian consul-general and his staff.

HUMMEL AT WORK

On April 2nd Hummel was summoned to Yang's brother-in-law Liu, who had recently been appointed governor of Aqsu and was now seriously ill. The doctor rode off immediately, and found the patient more dead than alive. His legs were enormously swollen, the pleura was almost full of water, the heart extremely weak, and he had the greatest difficulty in breathing, being, in fact, on the point of suffocating. As Hummel realized that the sick man might die any minute and would probably not survive the night, he went to Yang and expressed his hesitation at taking over a seemingly hopeless case. Only if Yang definitely desired it would he do what lay in his power. Yang replied: »Do everything you can. If he dies it is the will of the gods.»

After this Hummel spent most of his time with the sick man. A first puncture was performed and a quantity of water drained off. Yang was himself present and sat for five hours, in Hummel's company, with the patient. He expressed his admiration and surprise over the tapping and often reverted to the subject afterwards. The patient recovered before his own eyes, the water disappeared, the breathing became quiet and the heart-beat returned to normal.

The mandarins especially were very impressed by this successful cure, and the doctor's reputation spread and redounded favourably upon the whole expedition.

Hummel had better opportunities than we others of becoming familiar with the lives and deaths of the Chinese. On one occasion an urgent message came from a mandarin. In the latter's house the doctor found a servant stretched out on the earthen floor, to all appearances dead. He had taken such a stiff dose of some narcotic drug that his life hung in the balance. The man had been discharged that same day, and found his dismissal so unjust that he had decided to take his life in his master's own house. Such a vengeance is not uncommon in China. A servant will commit suicide, not from grief, but because his master, if the death takes place in his home, will lose face. Hummel prescribed a drenching of the servant's naked body with cold water. This helped; the man came to, got to his feet, and was even able to make off. But when quiet had been restored he returned and took a dose that was perhaps twice as strong. And this time he succeeded in his design and it was not possible to bring him back to life.

DINNER FOR YANG

On the 5th of April we gave a big dinner for Governor-General Yang, Fan, Liu, the Qara-shahr Mongol prince, McLorn, Hilbrenner, Pan-Tsilu (an English-speaking Chinese who was of great help to us in a variety of ways), and several others. Burkhan interpreted all the speeches and conversations. The dinner was a success; Yang seemed to be enjoying himself and was in the best of spirits.

He noticed at once that HUMMEL was not present at table, and when I explained that he was with the sick governor of Aqsu he found this very self-sacrificing.

When one gives a dinner for such a potentate, who comes with an escort of fifty men, one must also provide food for the whole of this company. We had therefore laid tables for them in the courtyard with food ordered from the bazaar.

NEW DETACHED PARTIES LEAVE

On Easter Sunday TING and CHAN set off on their long journey to the southern part of the T'ien-shan between Qara-shahr and Kucha.

On the 20th of April MARSCHALL and LIU returned from the Bogdo-ula station, and it was now HUMMEL's turn to take their place. He was accompanied by his assistant and teacher in Russian, VOROTNIKOV. The doctor's patients were now so much better that he might safely leave them for a time.

On the same day YUAN also started out on a geological, palaeontological and archaeological tour to the northern foot of the Bogdo-ula range.

CANCELLING OF AVIATION PLANS

On April 25th SIU and I paid another visit to YANG. I wished to inform him that at the beginning of May I intended to return to Europe for a couple of months, and it was therefore necessary to discuss with him the question of the expedition's position and plan of work during my absence. All my requests, now as before, were granted. He asked me to buy for his account a pair of pistols with ammunition as well as a fair-sized telescope. We should be given passports and other necessary papers, and motor-cars to Chuguchaq.

The reason for my European journey was that I had received a telegram from Lufthansa, who on behalf of the German financial backers of the expedition expressed the urgent desire that I come to Berlin for an important conference. I had, moreover, pressing business in Stockholm and could the more easily entrust the leadership of the expedition to Professor SIU and Major HEMPEL as the meteorological stations were already assured and the various field parties were at work in their respective districts. As the Chinese had vetoed our flying plans there was no point in my keeping all the German pilots in Sinkiang, and I was therefore able to send four of them home. The Germans I kept out there would all be occupied at the stations. It was my dream to take advantage of the splendid position we had won to add to the Swedish scientific staff, and not least on this account was my journey to Sweden necessary.

Of these last hectic days in Urumchi, during which all preparations for my journey were made and all the obligations that were dictated by Chinese etiquette complied with, I will mention only a couple of episodes.

On April 29th I had invited Governor-General YANG, FAN, LIU and several other guests of honour who had been of help to us, as well as the gentlemen on the staff of the Russian consulate-general, to a farewell dinner in the big commemoration hall in the public gardens.

Urumchi's *jardin publique* is one of Governor YANG's works, and was projected not only for the pleasure of the people but also for his own glorification. In a grove of magnificent trees is the private section of the park, situated on the banks of the little river that flows along the western side of the town. The main building has been designed in the bizarre Chinese style, while other houses had here and there a Russian touch. The big halls and reception-rooms are situated one flight up and give on to a balcony or gallery on wooden columns. The actual commemoration hall is a room at one long side of which one finds a Chinese altar with all the usual decorations and sacrificial objects, and a painted life-size portrait of YANG in full uniform, figuring as an altar-picture. It is as if he were already dead. Doubtless he had this curious temple erected in order to commemorate himself and his work in Sinkiang. On the open space before the façade there is also in a little open pavilion a richly gilded statue of YANG.[1]

Just opposite the entrance to the main building on an island one finds a pavilion whose roof is supported on red wooden columns and from the balustrade of which one has a splendid view of a pond surrounded by leafy trees. It is called The Pavilion of the Mirror-Lake.

This was where our guests were to foregather. Punctuality is scarcely a Chinese virtue. They were invited for one o'clock, and a few minutes before the hour SIU and I were on the spot. Hardly had we mounted the platform of the pavilion before the sirens of YANG's car were heard and the flame-coloured mounted guard came galloping up to form two files between the pavilion and the main building. We hurried down to meet the ruler of Sinkiang. And we sat talking in the summer-house for a good hour before the other guests put in an appearance.

When all had arrived I conducted YANG to the upper room, where three round tables were laid. Only Chinese dishes were served. Everyone was in high spirits. In my speech to YANG I thanked him for the time during which we had been his guests in Urumchi and expressed my happiness at the circumstance that our impending separation would only last for three months. He wound up his reply with a »welcome back!»

In the course of the meal YANG asked me during my visit to Sweden to buy for his account ten motor-cars of a make that would be suitable for the Sinkiang roads.

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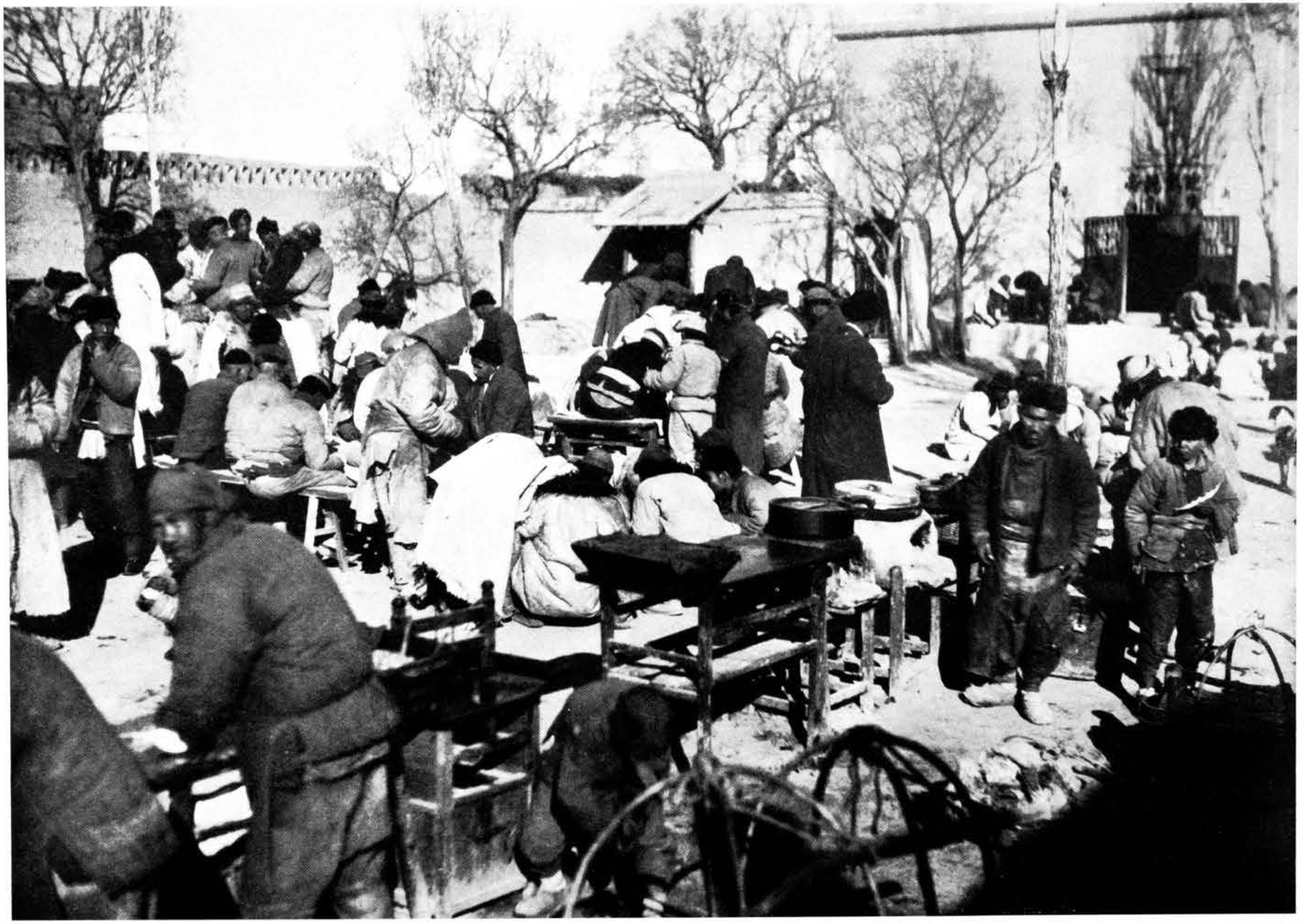
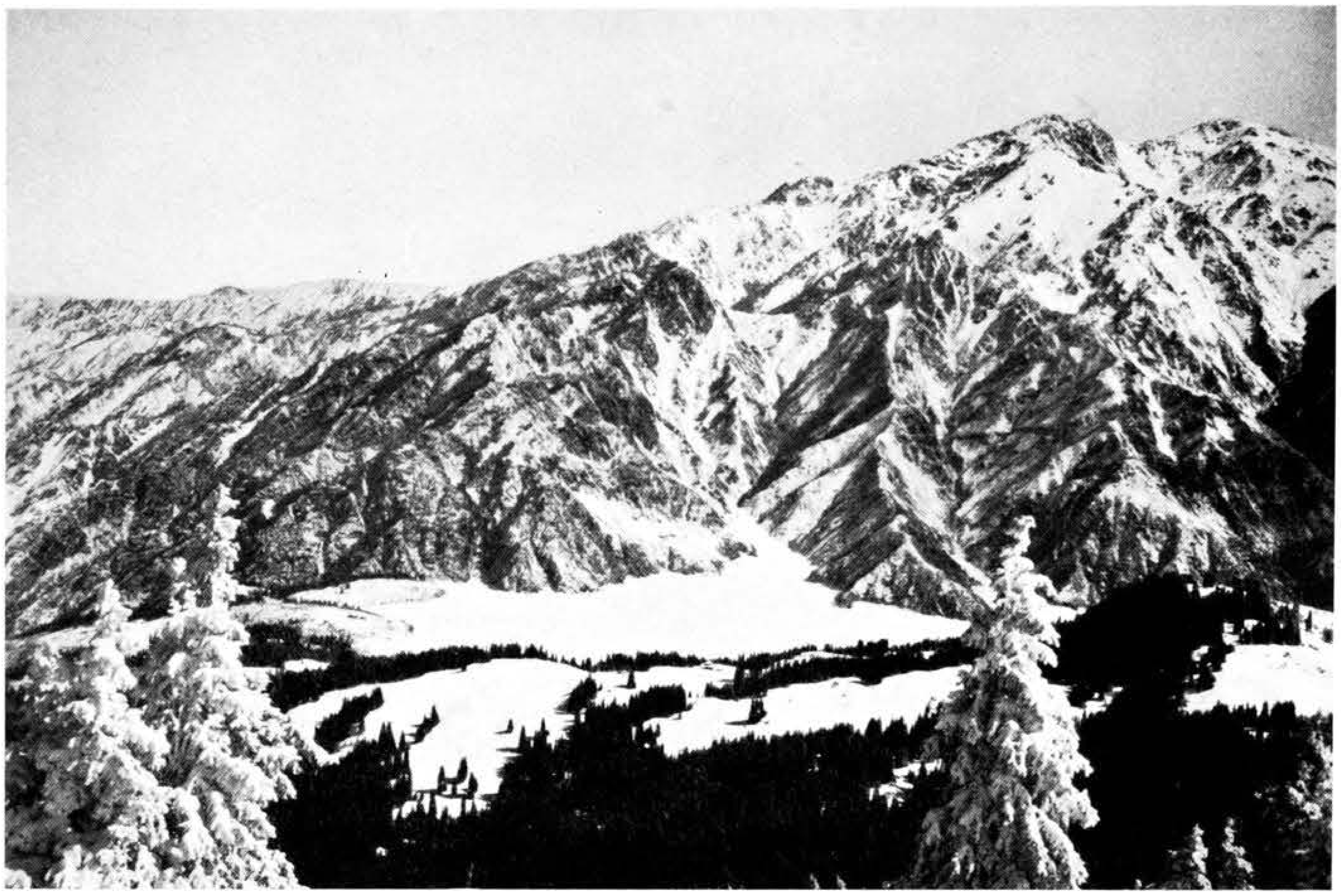
[1] The collection of funds for the erection of this monument in the Public Garden was conducted throughout the whole district by forced subscriptions. And as a gift »from the grateful population» appeared this ugly copper figure with gilded epaulettes and stars. NICHOLAS ROERICH in »Altai — Himalya». F. B.

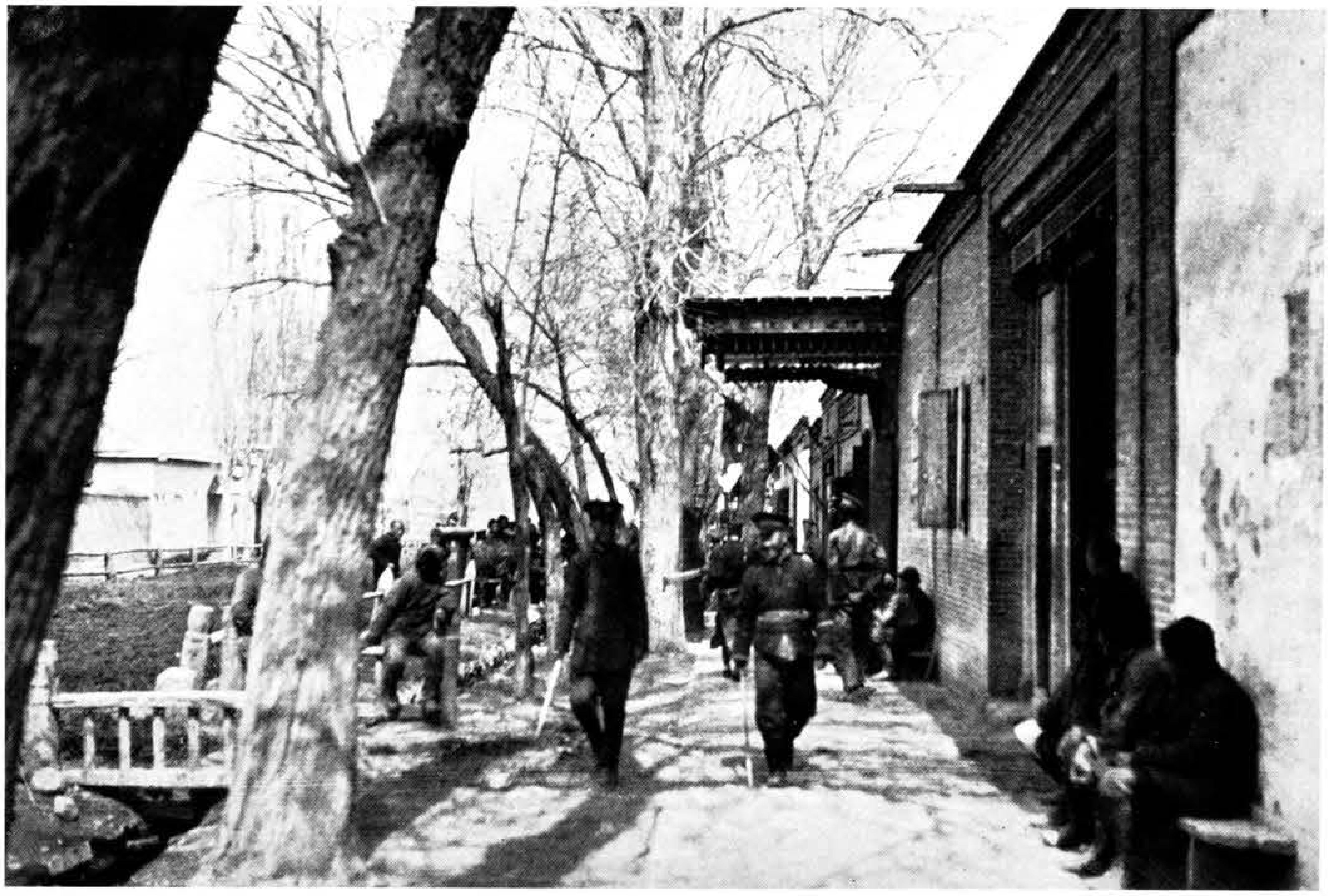


Lively traffic in a market-place

Lieberenz Photo



The snowy alps of the Bogdo-ula *Lieberenz Photo*



The street outside our headquarters in Urumchi *Lieberenz Photo*

He would pay for these on my return, but I might use as many of them as I needed as long as the expedition lasted.

I afterwards discussed the motor-car question in greater detail with YANG and BURKHAN, suggesting that I should bring back with me only four cars to start with, an amendment to which YANG gave his approval.

On a later occasion YANG asked me to bring back to Urumchi two Swedish mechanics who could speak Russian and repair his motor-cars. They would be paid three hundred silver dollars a month in addition to house-room, lighting and fuel. I promised to do my best.

DEPARTURE FROM URUMCHI

I had hoped to be able to leave quietly; but not even now, when I, HEYDER, MARSCHALL, MASSENBACH and MÜHLENWEG had a thousand odd things to think about, were we left in peace. YANG had decreed that our departure on May 5th should take place from the pavilion in the public gardens, where FAN, LIU and our other friends were to witness our start.

We met, therefore, at this place and at a long table we were regaled with tarts, sweetmeats, cigarettes and wine. And once more the eternal speeches succeeded each other. Again I had an opportunity of thanking the Foreign Minister, the Minister of Education and the Soviet consul-general for their kindness in facilitating our stay in the province and our impending journey home. Meantime, YANG had commissioned FAN to convey his greeting and his large red visiting-card to me. I replied with my greeting and my thanks to him. But time was passing and the two motor-cars were waiting. I rose to my feet. We took a hearty farewell of all and were driven away from the gardens and the town.

XII. A VISIT TO STOCKHOLM

BY MOTOR-CAR FROM URUMCHI TO CHUGUCHAQ

Behind us paled the Bogdo-ula, God's Mountain, that with its eternal snowfields and glaciers resembled a lighthouse over the steppes and deserts of Dzungaria. To the left we had the northernmost ranges of the Celestial Mountains, bluish walls with white turrets, and to the right the vast plain-country extending to the Tarbagatai and the Altai in the far north.

We drove through the bazaar in Manas and over its broad-flowing river, which is here split up into a dozen minor streams. The water swirled about the cars as we crossed.

Early on the third day we were held up by horrible salt swamps near Hsi-hu, in whose thick mud the cars sank down to the axles. It is no use being impatient when driving on this queer road; it is good for camels, at certain seasons passable for carts, but always, especially in spring and autumn, an ordeal for those who go by car. We were lucky, for it had not rained of late and the melting of the mountain snows was already over. But the salt swamps were still soggy with water. A Sinkiang bus must also rank high as an instrument of torture. The seats are not arranged cross-wise, but comprise two benches placed lengthwise along the sides. But then the bus-fittings are home-made in Urumchi.

The river Aq-su just to the north of the salt swamps had swollen to a breadth of fifty meters, and was 1.4 meters in depth. The driver tried to make the crossing in the bus, but fifteen meters from the bank the motor was submerged and stalled. Attempts to drag the bus with horses were unsuccessful. Finally, it was hitched up to a lorry, and after much trouble it was towed back to its original point of departure on the bank.

At length we got over the river in hired carts, and were then obliged to cover the distance to the village Durbeljin and the further sixty kilometers to Chuguchaq in a horse-drawn conveyance.

In Chuguchaq we stayed with IVAN MIKHAILOVICH HOKHRIAKOV, a white-Russian, in his fine Russian house. He was the representative of the firm of GMIRKIN.

I had decided not to take the usual route to Semipalatinsk via Bakhty by car, but to go by boat on the Irtish to Omsk.

By a curious accident we were delayed in Chuguchaq for four whole days. The entire western part of the town was flooded by the irrigation canal carrying water from the Tarbagatai to the fields and gardens of Chuguchaq. The canal had now changed its course. Two human lives were lost as well as a number of sheep and cattle, and no fewer than one hundred and twenty houses collapsed. Also in HOKHRIAKOV's compound the walls of several outhouses were demolished.

FROM CHUGUCHAQ TO ZAISANG-NOR

With horses and four-wheeled *telegas* we now set off to the north-east, to cross the Tarbagatai over the pass Kuseinsky-pereval (Kuseun). Here there is a Russian frontier-post, where our papers were examined and where we were hospitably entertained with tea and bread. And so we left Chinese soil.

The road was not of the best, but our telegas were equal to it; and after three days' journey we arrived at the little town of Zaisang, where a mild customs examination took place.

When a day later we reached the little fishing-place Topolev-mys or »Poplar Point» (though there is not a single poplar there now), we had driven 920 kilometers from Urumchi.

WITH RIVER-BOAT FROM ZAISANG-NOR TO OMSK

Topolev-mys is the terminus for the steam-boat traffic on the Irtish. It is situated on a flat spit of land thrusting out into Zaisang-nor. This lake is from south-east to north-west 120 kilometers in length, and its greatest breadth is nearly thirty kilometers. The Black Irtish, coming from the Altai, disembogues into its south-eastern part. From the north-west part of the lake the Irtish proper flows out as an imposing and mighty stream to break through another part of the Altai with its meandering course.

We drove direct to the *pristan* or landing-stage, which consists of a huge anchored barge, on which a couple of wooden barracks have been erected. The boat was already due, but we had to wait for three days before it came. It was a little paddle-boat, on which there were three different classes. The first-class had cabins and was spotlessly clean. For an extra charge one could get sheets, pillow and blanket, but we contented ourselves with our old sleeping-bags. On the lower middle-deck were open sleeping-berths for second-class passengers; and on the after-deck the third-class passengers had to accommodate themselves with their bundles as best they might. Before the bridge was a promenade-deck.

Fig. 26. Malo-krasnoyarsk on the Irtish

The boats on the Irtish bear names such as Rosa Luxemburg, Liebknecht, Lenin, Karl Marx, The Third International. The saloon was situated in the prow, and most of the outer wall was of glass. One could sit at the white-clothed tables for hours enjoying the view, which on the voyage through the Altai is incomparably lovely. And even without being a gourmet one could not help appreciating the Russian kitchen on board. I am not here referring to the usual courses and the soups that one gets everywhere in Russia, but to the fish, especially the sturgeon, and the absolutely fresh caviare, grey and large-globuled, so cheap and abundant that one would certainly choke if one did not put a brake on one's appetite! We almost lived upon caviare during the six days on the Irtish.

In the morning light we entered the funnel through which Zaisang-nor pours its superfluous waters into the mighty Irtish. The lake lies 413 meters above sea-level. The Irtish has a slow fall. Its waters seldom rush. Generally it glides along in majestic dignity, soundlessly rolling its massive volume in graceful, swirling coils. On the north shore of the lake is an extensive plain; and the landscape does not become beautiful until one sails in between the two mountain-ranges that bear the names Kalbinsky and Narimsky in the Altai. Unfortunately it was already late in the afternoon before we got so far. But as long as the fading light lasted we stood admiring this imposing landscape and the cliffs falling sheer down to the river.

At all the landing-places one finds barges serving as jetties, and the whole of the local population comes down to the bank to look on at the loading and unloading operations, which sometimes last for an hour or so. Occasionally another passenger comes on board from a boat that is rowed out to the paddle-steamer from the bank. During the latter part of May all the Siberian rivers are in flood.

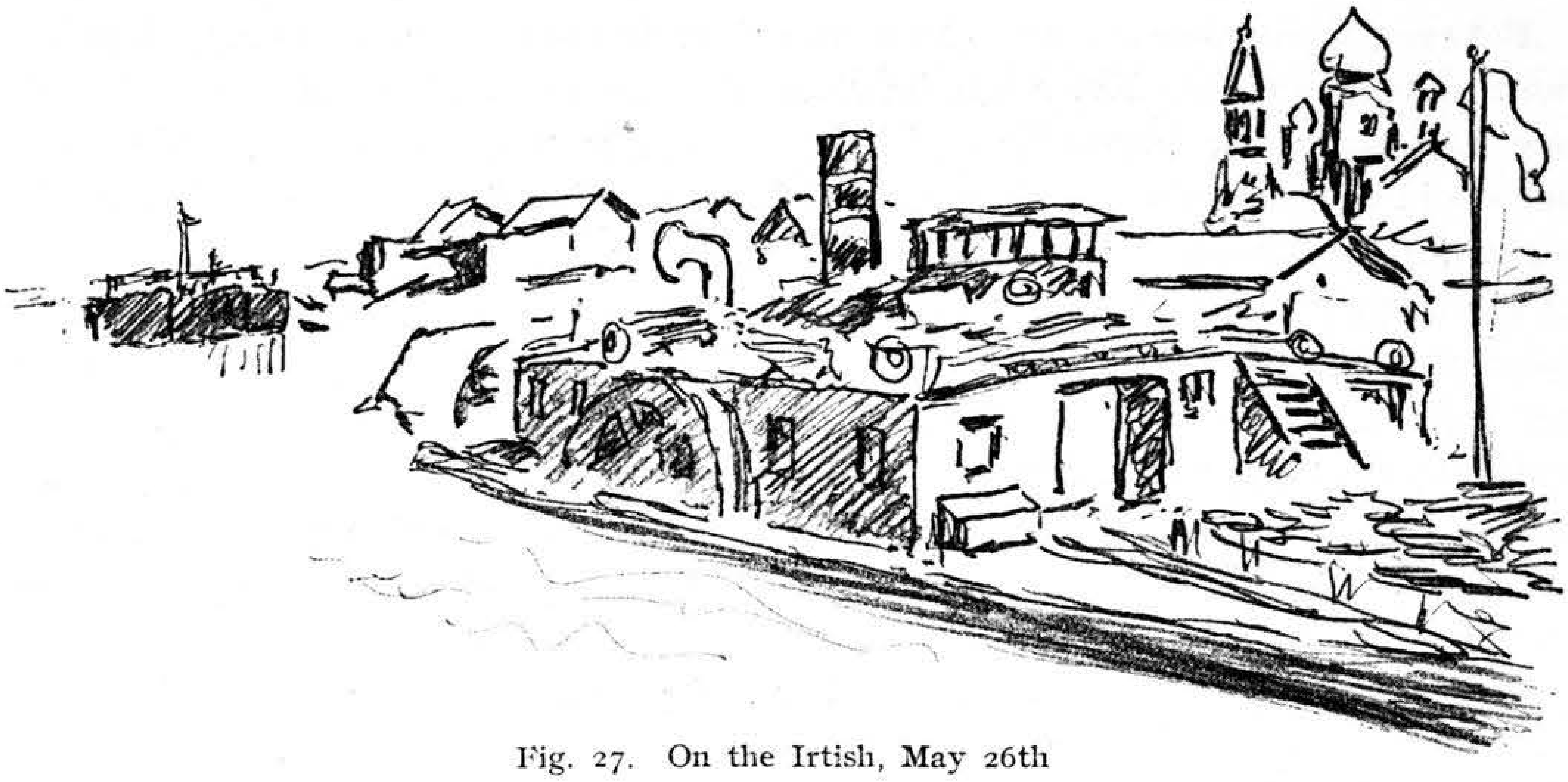


Fig. 27. On the Irtish, May 26th

Several times a day we were able to observe how caviare is to be treated. One would put in at a little fishing-settlement. On hand-barrows or in wheel-barrows the fishermen brought their sturgeon on board, leaving them in the cook's pantry. There stood a big table round which four girls with rolled up arm-sleeves were ranged in readiness to receive the fish. The newly bought female sturgeons, often as much as a meter in length and swollen with roe, were now handled by the girls. One of them would cut up the fish, easing out great heaps of roe with a wooden knife. The roe was then distributed among the others, who cleaned it from membranes, connective tissue and blood-vessels till the corns were quite free. They were then spooned up into sieves with wooden spoons. The cook, a giant in a white apron and cap, took charge of the sieves and strewed a thin layer of salt over the roe. He took great pleasure in explaining the procedure to us. It is not often that one has an opportunity of eating such fresh caviare, only a couple of hours old.

From the right came the tributary Bukhtarma, which has a stronger current than the main river, so that little whirlpools and eddies were formed where the two streams met. The little town of Ust-kamenogorsk is beautifully situated in the mouth of a valley. Shortly afterwards the river leaves the mountain-region behind. The last hills disappeared in our wake, and on either side extended immense plains. The river became so broad that it resembled a long lake. Sometimes it was necessary for a sailor to take soundings with a pole, when the captain was uncertain as to the course of the main channel.

Over the plains rose the church-spires of Semipalatinsk, and the mighty railway bridge that was then under construction. We spent a couple of hours in this town and then went aboard a considerably bigger paddle-boat.

Between Semipalatinsk and Omsk the river follows a north-westerly direction, over unbroken plain. Not a hill, let alone a mountain, in sight. For long stretches one had more the impression of being in a bay than on a river. Sometimes one could not even see the other bank. The following figures, from measurements taken for the Tomsk communication area many years ago, may give one an idea of the mighty dimensions of the Irtish. At a point situated 147 kilometers below Semipalatinsk the river had, on June 2nd 1902, a mean rate of flow of 1.05 meters per second, a breadth of 452 meters, a mean depth of 3.4 meters and a volume of 1585 meters per second. But only eleven days later, at Torochinsky, 337 kilometers below Semipalatinsk, the river was carrying 2670 cubic meters per second and had a mean depth of 6.2 meters and a mean rate of flow of 1.10 meters per second.

In Omsk, where we arrived after six days' journey on the river, during which we had covered about 1300 kilometers, we had time to look over the town before the trans-Siberian express left for Moscow.

HOME

On June 2nd, after twenty-eight days of travel, we arrived in Berlin, where I said goodbye to the German members of the expedition who had accompanied me on the homeward journey. They were now to return to their private lives again, and it was not without emotion that I took leave of them, with warm thanks for their eighteen months of faithful service in Asia. For my own part I continued home to Stockholm, where I arrived safely on June 5th. Here I had to set about the task of raising new funds for the continued activities of those members of the expedition who were still working to advance the frontiers of science in the heart of Asia.

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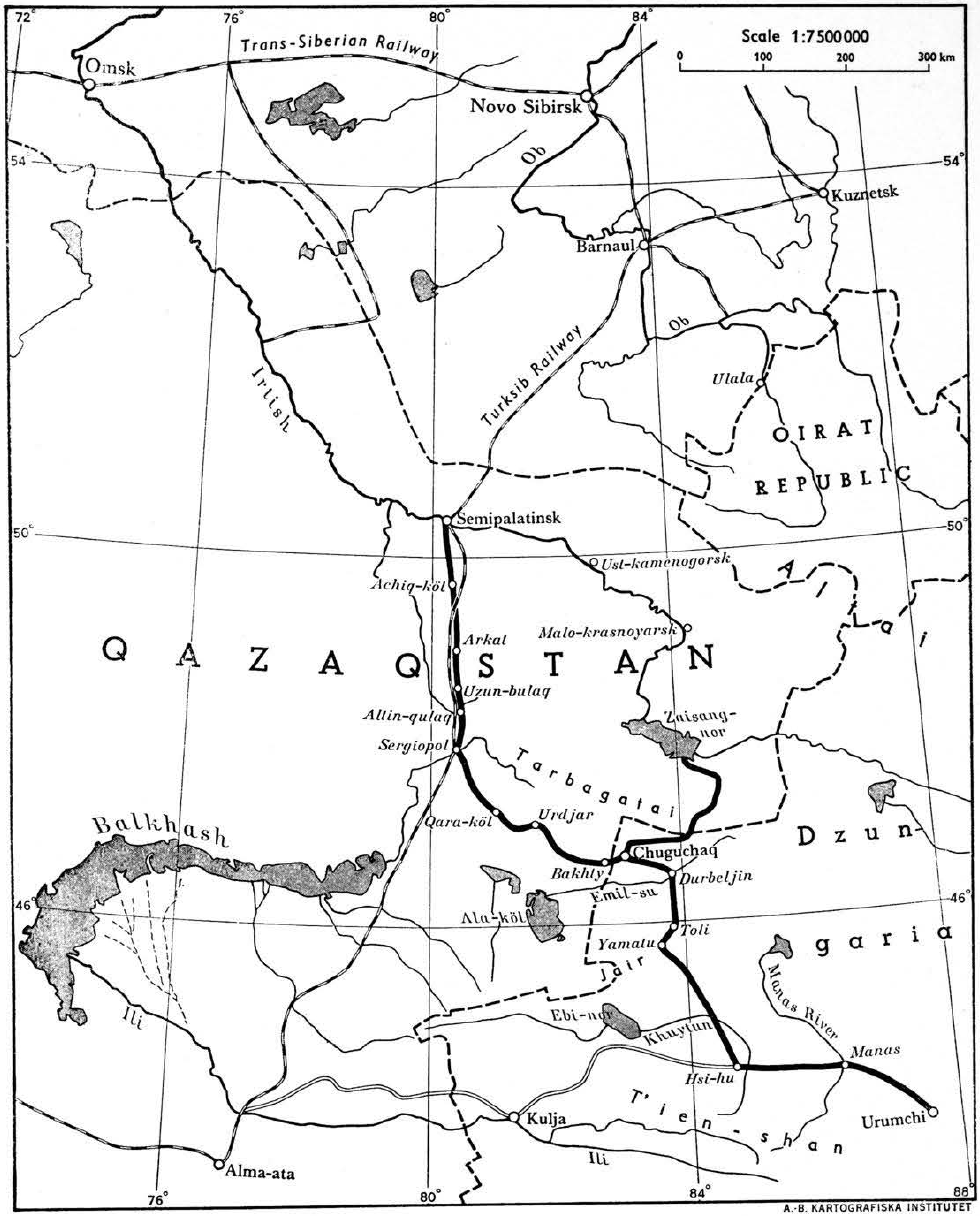
東洋文庫



A.-B. KARTOGRAFISKA INSTITUTET

Map of the region to the north-west of Urumchi, not included in the big map, showing the following routes taken in 1928:

1) from Urumchi to Chuguchaq, Zaisang-nor and down the Irtish to Omsk, see Part I, pp. 254—58,

2) from Semipalatinsk to Chuguchaq and Urumchi, see Part II, pp. 7—22,

3) from Urumchi via Chuguchaq to Sergiopol, see Part II, pp. 40—45